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PSYCHOGENESIS.

EVERY unsophisticated man is a natural realist, that is, he believes, on the one hand, in the reality of the extended, space-occupying objects which make up the material world; and, on the other, in the reality of those feelings, ideas and volitions which are the contents of his personal consciousness and make up his mental world. The materialist and the idealist alike are the products of reflection aiming at the reduction of all phenomena to a fundamental unity, which reason seems to require. The distinction between objects-of-consciousness and consciousness-of-objects cannot be obliterated, however, by any legitimate process. We have, then, these two phases of reality firmly fixed in the field of thought. The materialist says that unconscious objects-of-consciousness generate consciousness-of-objects. The idealist says that consciousness-of-objects sufficiently explains objects-of-consciousness. Either thesis may appear plausible from different points of view. Both stand in need of explicit confirmation. The truth is, that there are no known objects-of-consciousness without consciousness-of-objects, and there is no consciousness-of-objects without objects-of-consciousness. In other words, a human being is at the same time a conscious intelligence and a living organism furnished with sense-organs. In him two correlated series of phenomena are co-existent, the phenomena of consciousness, which with Mr. Huxley we may call "psychoses"; and the phenomena of organic movement, which we may call "neuroses." So far as

observation extends, we have reason to believe that there are no "psychoses" (mental phenomena) without corresponding "neuroses" (organic phenomena). And yet it is impossible to translate any psychosis into any neurosis, or to say that this organic movement has *become* this phase of consciousness. Nor is it possible to say that this neurosis has *produced* that psychosis, as we may say that these two movements in space have combined to produce that movement in space. We evidently have here *two orders of reality*, one an order of consciousness-of-objects, the other an order of objects-of-consciousness. The problem of psychogenesis is, to trace the origin and development of this consciousness-of-objects.

The Localization of Mental Action.

Every known mental manifestation is associated with organic movement, and in man both mind and its expressive movements are centred in the cerebro-spinal portion of the nervous system, and especially in its encephalic ganglia, the brain. This complex and important organ has received within recent years the minute and prolonged attention of investigators both from an anatomical and a physiological point of view. Its topography has been carefully represented by means of accurate charts and models, its histological components have been examined by means of improved methods of section and coloration under microscopes of high power, its functions have been studied in the lower animals by every means at the disposal of science, and in man by post-mortem examination of sound and pathological cases as well as in lesions of the living. As a result of these investigations, a new and suggestive body of evidence is in existence regarding the localization of function. It is found that specific areas, more or less distinctly circumscribed, are specialized for motor and sensor functions, and that each sense has its own appropriate tract of stimulation. It is true that, as early geographers differ in their report of newly discovered countries, investigators in this newly explored territory vary in their results; still, there is a consensus on many important

points, and, what is more significant, there is now unanimity among the specialists as regards functional limitation. Interesting as many of the details might be, it is impossible to give even a summary of them in this essay. It is sufficient for our purpose to show the bearing of the facts of localization of function upon the problem of psychogenesis. The first proposition derived from these facts is, that psychosis and neurosis are phenomena having common space-relations. The second is, that they are manifested in distinct tracts of organic tissue and are, therefore, not only correlated generally but specifically in the organism. The third inference is, that these specifically correlated psychoses and neuroses result from a differentiation of function that accompanies a differentiation of the tissue in which they have their seat; or, in other words, that, as parts of the brain are developed and adapted to specific uses, the correlated psychic manifestations, although not identical either with their substance or their activities, are also developed and adapted in a corresponding manner.

Unconscious Cerebration.

While it may be said that every psychosis is accompanied by a correlated neurosis, it cannot be maintained that every neural change is attended with consciousness. The nutritive processes in the tissues of the brain during sleep have no mental concomitants. Other changes of a more complex character are also unattended with conscious phenomena. Unconscious cerebration occurs in which very complicated acts, including those, perhaps, of ideation, are perfectly performed. It is now established that the paths of reflex action, traversed by external stimuli reappearing as motions, are continuous; that is, that the afferent nerves terminate in ganglia whence originate the efferent nerves by which the muscles are set in motion. This statement is subject, however, to the qualification that no nerve seems to be strictly continuous, but to consist in a series of elements through which motion has continuity. The in-carrying and out-carrying tracts of nerves are woven into a complex

central network, so that stimulus may traverse the whole system. The central connections may be so traversed as to produce an exceedingly complicated series of outward movements, as in the feats of somnambulists, or the still more wonderful performances of hypnotic subjects, without any trace being left in the memory of the conscious subject, and probably without any accompaniment of consciousness at the time of the action. It is even conceivable, so large is the provision for automatism in the nervous system of man, that a person might live for months, or even years, in a perfectly unconscious condition, the bodily organism answering periodically to the sense-stimulations entering and producing movements along the pre-established lines of least resistance ordained by previous habit, and causing such actions as those of eating, drinking, turning, rising, and perhaps even those of walking. These considerations have led certain writers to regard consciousness as an "epi-phenomenon," a kind of appendix to the book of life added to the completed volume, a sort of afterthought suggested too late for insertion in the text. Perhaps, however, we might find a deeper truth in the allegory if we should say that consciousness is a generously devised epitome in which the great argument of the book is briefly summarized.

The Physiological Conditions of Consciousness.

If only *some* neural changes are attended with consciousness, it is necessary to ask under what conditions it arises. Richet, in his *Psychologie Generale*, enumerates the following physiological conditions of consciousness: (1) Circulation of the blood. The cessation or interruption of the circulation is followed by a syncope of consciousness. A moment's pressure of the great arteries supplying blood to the brain renders the subject unconscious. (2) Respiration. The psychic effects of asphyxia are well known. At the end of the first minute, there is an increasing distress. At the end of the second minute, an intense pain supervenes with suffocation accompanied by convulsive and epileptiform movements. In the midst of this

overwhelming agitation intelligence remains unmodified. But soon external objects are no longer perceived; vision is disturbed, ideas become more and more confused, then consciousness is lost. The convulsive reflex movements still continue but become less and less frequent and at the end of the fourth minute they also cease. (3) Nutrition. The cerebral cells are renewed by the aliment contained in the blood. Hunger and thirst are psychic notifications of its changed condition. Although consciousness continues long after the supply of aliment has been withdrawn, delirium at last sets in, ideas become incoherent, sensibility is modified, and at last, death ensues. It seems as if the separate centres, and even the separate cells, have a life of their own which endures after the bond that unites them in rational co-ordination has been broken. (4) Temperature. Consciousness is manifested only within certain very narrow limits of heat. For the warm-blooded animals the normal temperature of the blood does not vary much. For man it is about 98° F. At a few degrees above this, delirium appears and, if the temperature still rises, consciousness is soon lost. Excepting in the hibernating animals, which endure a low degree of cold, still not without the loss of consciousness, life itself ceases when the temperature of the blood falls much below the normal. But long before life becomes extinct, consciousness disappears and all spontaneous movements cease. The daily variation in the temperature of human blood, in health, is only about five degrees. (5) Age. All living tissues are subject to a common law. They are born, grow old and die. This process is constantly going on in every living man. The nervous tissues are no exception. The brain, like a tree withered at the top, may lose its vitality long before the other parts of the organism have yielded to the law of death. Or it may put forth its signs of vitality when trunk and roots give no promise of longer life, like the pine-tree whose evergreens wave triumphantly on the breeze above the scars of the lightning's stroke. (6) Sleep. One of the conditions of the existence of the nervous system is the intermittence of its action. No living creature can continue always

awake. Sleep is the universally necessary period of repose and rehabilitation. It is a question whether, viewed from its psychic side, it implies the abolition or only the diminution of consciousness. Locke maintained the former, Hamilton the latter thesis. The truth probably is that consciousness may be represented under the similitude of a conical figure. To be wide awake, is to be aware of all that can be embraced by its largest circumference, the base; to be fast asleep, is to be aware of nothing, or the contents of its smallest circumference, really a circumference no longer except by courtesy, the point which constitutes its apex. Between these extremes there is room for every possible degree of consciousness as testified to by the personal experience of various witnesses. But all testimony upon the continuity of consciousness is subject to the important qualification that, if there were a lapse of consciousness for a period of any length whatever, it would not be an element of conscious memory. In cases of syncope the thread of conscious experience is resumed exactly where it was broken off, so that a sentence, begun before a railroad accident, has been completed weeks after its occurrence, the injured person in the meantime lying apparently lifeless in a hospital. That some persons believe themselves to be continuously conscious, even during sleep, is, therefore, a fact easily explained. It seems paradoxical to say that we are conscious of our unconsciousness, but this is not the position of him who denies continuity so much as of him who assumes that if we were unconscious we would be conscious of it. The only true test must be objective, and judging by this we must conclude that, although insomnia may be protracted in abnormal cases, it is never manifested in normal experience as a strictly continuous consciousness, and even in abnormal cases is by no means so complete as the patient fancies. The foregoing are the leading physiological conditions of consciousness. It needs only to be added that the integrity of the cerebral organ in general is essential for normal consciousness. Whatever tends to destroy this, whether the agent be toxic or mechanical, disturbs the unity and harmony of the psychic life and, if carried to an extreme, ends in

the cessation of consciousness altogether, so far as objective tests can determine.

The Identification of Consciousness and Motion.

So far our inquiry has developed only negative results, showing the limits beyond which consciousness is not manifested. This is far from being what we require for a positive explanation of psychic phenomena. In his *Grundlinien einer allgemeinen Psychologie*, Hertzen, of Lausanne, has endeavored to present the positive condition of consciousness. He says: "Consciousness is connected exclusively with the *disintegrating* phase of central nervous action." He offers the following laws of relation: (1) "The intensity of consciousness is in *direct* ratio to the intensity of functional disintegration." (2) "The intensity of consciousness is in *inverse* ratio to the ease and quickness of the central translation of stimulus into action." This last corresponds to the diminishing sensibility in the growth of habit, or the law of increasing automatism. What we do easily and quickly we soon do unconsciously. Thus, we learn to walk, to read, to spell, to write with a minimum of consciousness. A transaction that is difficult and new gives us much thought, perhaps worry, a feeling of resistance among our ideas corresponding to the disintegration of cerebral tissue noted by the physician in the copious waste products eliminated from the body. But precisely what this metabolism is by which the disintegration of cerebral tissue becomes the condition of consciousness Hertzen is far from disclosing. He identifies psychic activity with motion, — the molecular motion produced by the decomposition of nerve-cells. He says: "We may liken the brain to a hall provided with a multitude of gas-lights, but illuminated by only a relatively constant number of burning jets, which, however, are not always the same; on the contrary, they change every instant: as some are extinguished, others are lighted; all are never lighted together; from time to time all are dark" (p. 98). Just as light is a mode of motion, this writer maintains, so also is consciousness. We may not be able to

display to the eye the configurations that represent its varied phases, but it may be proved, he thinks, that consciousness is a mode of motion; and, having done this, having co-ordinated it with light, heat, electricity and the other molecular forces, we are no more required to show what kind of a motion corresponds to love and what to hate, for example, than to describe the form of a wave of red light or construct a diagram exhibiting the secret of electrical repulsion. All this must be conceded if it can really be proved that consciousness is simply a mode of motion. The proofs of it, according to Hertzen, are both indirect and direct. The indirect proof is, that, as motion is for us a series of changing sensations, these sensations can be nothing else than motion. The direct proof is, that all our states of consciousness have a measurable duration and every psychic act has a time-relation. But every process that has duration can be nothing else than motion. Therefore every psychic activity must be a motion, and consciousness is the sum of these activities. We may well regard this facile resolution of consciousness into motion with serious reserve. This simple solution of the problem succeeds only by ignoring the central difficulty, — the translation of objects-of-consciousness into consciousness-of-objects. Motion is, indeed, known to us as a relation of change among our objects-of-consciousness, but this does not justify us in affirming that consciousness-of-objects is also motion. The duration of mental states, it is true, implies the existence of motion as the measure of that duration, that is, in the neurosis to which the psychosis corresponds. But Hertzen's explanation identifies neurosis and psychosis, for he says that the consciousness-of-motion is simply that motion which he calls consciousness. This identifies subject and object as absolutely as Hegel did, and resolves all being into thought. It may be said, however, that Hertzen identifies consciousness with a particular kind of motion, but this is to exclude the knowledge of any other kind; for the consciousness-of-motion being simply the motion-of-consciousness, only the motion-of-consciousness is in the field. This turns out to be a very old-fashioned solution of the problem, for it is nothing else

than subjective idealism in a new guise. We know objects because we are those objects. "Motion" is used as a convenient middle term for the unification of the consciousness-of-motion with consciousness itself. To recur to Hertzen's comparison of the brain to a hall with a multitude of gas-lights, we may say that each light, if its molecular motion were of the kind that is identical with consciousness, would simply be conscious of itself, not of the other lights. If molecular motions in the brain are identical with consciousness, they also would be conscious of themselves, but not of one another or of anything else. There would still be wanting a being that could know and compare them together. But such a being, possessing a consciousness-of-objects, would be other than the objects-of-consciousness. If it be said that such a being may be found in the higher centres of the brain, it must be answered that these in turn would be conscious of themselves but of nothing else. Hence, in the last analysis, objective knowledge is shut out. But nothing is more certain than that objects-of-knowledge are other than the knowledge-of-objects. Correlative, they may be; identical, they cannot be. If they were identical, not only would knowledge be motion, but motion would be knowledge.

The Psychic Life of Micro-organisms.

We may find some aid in comprehending the origin of psychic phenomena by an examination of their simplest forms and lowest terms. In adult man they are exhibited in their greatest complexity. In the child they are more rudimentary, but still they are highly complex. No period of human infancy discloses their simplest forms. We cannot trace their development from the embryonic stage. But we can follow the thread of analogy suggested by embryology. Every human child, on the physical side, is developed from a pair of unicellular organisms, one of which seems to have no other part to perform than to quicken the development of the other in certain specific ways. What are the psychic manifestations of unicellular beings? The question may seem to be a vain one, but Binet has undertaken to

answer it in his little book on *The Psychic Life of Micro-organisms.*

Before we pass on to state some of the results of observation upon these infinitesimal beings, it may be well to point out the difficulties that have arisen from the supposition that living cells are wholly devoid of psychic life. Herbert Spencer, in his synthetic philosophy, has undertaken to unify our knowledge by analytically reducing conscious experience to its lowest terms and then building up synthetically an explanation of this experience. The lowest terms of consciousness he finds in sensation. But he begins his synthesis, not with sensations, as we might naturally expect, but with reflex actions primarily devoid of sensation. This inconsistency has led Siciliani, the Italian anthropologist, in his *Psychogénie Moderne*, to ask, "Why, after having arrived by the process of analysis at the elementary form of perception, that of difference, do you stop there; while you rise by the process of synthesis from reflex action as a point of departure? Why, in a word, does analytical psychology arrive at a conscious act, however rudimentary, while synthetic psychology starts from an unconscious and automatic activity?" (p. 84). This is a pertinent criticism, which applies equally to Romanes's endeavor to trace the evolution of psychic phenomena, since he denies them altogether to the lowest beings in the zoölogical series, and marks their appearance, one after another, in the ascending scale of life, in what seems a very arbitrary manner.

The thesis of Binet supplies Spencer and Romanes with a more satisfactory starting-point. Binet maintains "that, in these simplest forms of life (the proto-organisms), we find manifestations of an intelligence which greatly transcends the phenomena of cellular irritability. Even on the very lowest rounds of the ladder of life, psychic manifestations," he says, "are very much more complex than is believed" (p. 3). The lowest form of protozoön known to us is the Amœba. It appears to be a simple undifferentiated protoplasmic cell. "The following," says Binet, "is what occurs when the Amœba, in its rampant course, happens to meet a foreign body. In the first place, if

the foreign particle is not a nutritive substance, if it be gravel for instance, the Amœba does not ingest it; it thrusts it back with its pseudopodia. This little performance is very significant; for it proves that this microscopic cellule in some manner or other knows how to choose and distinguish alimentary substances from inert particles of sand. If the foreign substance can serve as nutriment, the Amœba engulfs it by a very simple process. Under the influence of the irritation caused by the foreign particle, the soft and viscous protoplasm of the Amœba projects itself forwards and spreads about the alimentary particle somewhat as an ocean-wave curves and breaks upon the beach; to carry out the simile that so well represents the process, this wave of protoplasm retreats, carrying with it the foreign body which it has encompassed. It is in this manner that the food is enveloped and introduced into the protoplasm; there it is digested and assimilated, disappearing slowly" (p. 41). Binet adds: "In a large number of species the prehension of food is preceded by another stage, the search for food, and in the case of living prey, by its capture. We shall not investigate these phenomena among all the Protozoa, but shall direct our attention especially to the ciliated Infusoria. Their habits are a remarkable study. If a drop of water containing Infusoria be placed under the microscope, organisms are seen swimming rapidly about and traversing the liquid medium in which they are in every direction. Their movements are not simple; the Infusory guides itself while swimming about; it avoids obstacles; often it undertakes to force them aside; its movements seem to be designed to effect an end, which in most instances is the search for food; it approaches certain particles suspended in the liquid, it feels them with its cilia, it goes away and returns, all the while describing a zigzag course similar to the paths of captive fish in an aquarium; this latter comparison naturally occurs to the mind. In short, the act of locomotion, as seen in detached Infusoria, exhibits all the marks of voluntary movement" (p. 46). With one more short extract I shall conclude my citations. "There exist organisms which lead a life of habitual isolation but which understand how to unite for the pur-

pose of attacking prey at the desired time, thus profiting by the superiority of numbers. The *Bodo caudatus* is a voracious Flagellate possessed of extraordinary audacity; it combines in troops to attack animalculæ one hundred times as large as itself, as the Colpods for instance, which are veritable giants when placed alongside of the Bodo. Like a horse attacked by a pack of wolves, the Colpod is soon rendered powerless; twenty, thirty, forty Bodos throw themselves upon him, eviscerate him and devour him completely" (p. 60). As a result of his investigations, Binet enumerates the following traits in these microorganisms: (1) the perception of the external object; (2) the choice made between a number of objects; (3) the perception of their position in space; and (4) movements calculated either to approach the body and seize it or to flee from it.

Organic and Functional Development.

Thus we seem to find psychic phenomena associated with unicellular beings at the very basis of organic life. Lower we cannot go. The doctrine of biogenesis, or origin of living organisms from other living organisms only, which science at present accepts as the only one permitted by known facts, shuts us off from any further pursuit of the subject. We find a sense-of-objects even in proto-organisms. Metazoa are apparently developed from these Protozoa. First they exist in colonies, each individual of which is like every other; then in colonies whose members perform specific functions; finally in correlative organs in which the separate cells have been widely differentiated into bone, muscle, nerve or other tissues, each group specialized to the performance of a single function, the whole federated into an organism whose intricacy is so great and whose components are so numerous that it has been only quite lately discovered that the human body, in common with every animal body, is built up of these living aggregates. But in this highly developed product we do not find evidence that the psychic phenomena of proto-organisms are displayed by all the constituent cells. In the process of specialization

certain functions have been delegated to particular groups of cells. Those of the nervous system have assumed and discharge the functions with which psychic phenomena are associated. As the single original row of nervous cells developed into a spinal cord, the psychic manifestations were handed over to that. As the spinal cord developed greater ganglia at one of its extremities, the more important of the psychic manifestations were passed on to these superior ganglia. Out of these developed the hind-brain, the mid-brain, the fore-brain, the total cerebrum in man, so that, as Goethe guessed, the skull is only the greatest of the vertebræ, and to the cellular contents of this crowning structure were at last transferred those neuroses which accompany human consciousness.

Consciousness is never strictly simple. Its very name implies the apprehension of at least two elements which are known together. The very essence of intellect is discrimination. But this proceeds to no great length without assimilation, that is, the apprehension of similarity. The whole fabric of knowledge consists in the sum of apprehended resemblances and differences. All thought is unification or differentiation. Its materials lie in the objects of consciousness. Its process consists in the consciousness of likeness and difference. Its laws are reducible to the principles of identity, contradiction and excluded middle. What we call "reason" is the unity which harmonizes diversity. Its categories are at once the forms of thoughts and of things, for otherwise thought and its objects would have no common bond and reason would know no necessity. Consciousness is this sense of unity. There may be sense-presentations without it, although the philosopher is not in a condition to experience them. A dog, a portion of whose cerebrum has been removed, may be excited by the presence of food; but he cannot co-ordinate his sense presentations. We may say that he is without consciousness. Consciousness is the string upon which the pearls of sense are strung. Break the string, and the pearls are scattered, but they do not cease to be. The string is broken when the co-ordinating centres in the brain are rendered inoperative by any cause. These centres

are called the "seat" of consciousness. Still, we may not say that their movements are consciousness. Consciousness is that psychosis in which other psychoses are unified. It has, indeed, been questioned whether or not there may be a spinal consciousness as well as a cerebral consciousness. It is not improbable that this exists in those creatures that are not provided with a brain. It appears, however, that the "seat" of consciousness is always the higher co-ordinating centre, and that, in the process of development, this is transferred to successively added increments of the evolving organism. If this be true, in man the inferior centres of the nervous system have been made the unconscious mechanism through which reflex and voluntary actions are mediated, while consciousness, in its full-orbed splendor, is possible only in the superior regions of the brain.

The Dissolution of Personality.

Recent investigations have made it appear probable that there may be more than one consciousness in the same brain. In his book on *Les Maladies de la Personnalité*, Ribot enumerates the types of what may be called the dissolution of personality, or the disruption of the unity of consciousness. They are as follows: — (1) Alienation, in which the consciousness of the body is completely changed. A new state serves as the basis of a new psychic life, or manner of feeling, perceiving, and thinking, whence results a new memory. The old life is reduced to an almost unconscious state and has become to the new consciousness an "alien," a stranger, whom the new person does not even know. (2) The second type is characterized by an alternation of two personalities, sometimes designated as "double consciousness." The two personalities are often completely ignorant of each other. The periods of the domination of each phase of consciousness vary in duration, but alternate at intervals, sometimes fixed and sometimes not. The phenomena resemble what we might expect if two souls dwelt in one body with alternating mastery, and in earlier times such cases were interpreted as the obsession of superhuman beings. It is

as if two different foci in the brain alternately became the points at which the mental life is converged and unified, each point of view wholly excluding all the mental scenery of the other. (3) The third type is more superficial and creates no absolute break of memory. It consists in a substitution of one personality for another, as when a man regards himself as a woman, or a laborer declares himself to be a king. This seems to be the concomitant of the hypertrophy of a fixed idea, a conception become so ineradicable that it cannot be co-ordinated with the normal psychic life. It appears that this aberration of consciousness is often only functional, not strictly organic, for hypnotized subjects can be made to change sex, or behave like persons other than themselves by mere suggestion. It is certain, however, that even suggestion is correlated with a neurosis that enters into the general web of neural change, for a person directed in the hypnotic state to perform a certain act, — even an extraordinary, an absurd, or a criminal act, — will execute it at the proper time. The subject has no conscious recollection of the suggestion and often endeavors to account for this suggested performance as having some connection with his natural course of thought.

Recapitulation of Results.

Let us now summarize the results thus far obtained and try to interpret their signification. We started with the antithesis of objects-of-consciousness and consciousness-of-objects, which we represented by the terms "neurosis" and "psychosis." We found that these antithetical terms embody a distinction that creates the problem of psychogenesis. We traced the progress that has been made in the localization of psychoses in the brain with whose neuroses they are connected as concomitants. We saw that not all, but only some, neuroses are attended with consciousness. We then examined the limits within which consciousness is manifested as indicated by the physiological effects of circulation, respiration, nutrition, temperature, age, and sleep. We next discussed the dependence

of consciousness upon the disintegration of brain tissue and the hypothesis that it is simply a mode of motion, which we were compelled to reject. We then followed the indications of embryology and considered the manifestations of psychic life in micro-organisms. We found that there is a sense-of-objects even in the lowest of these. We called attention to the fact that consciousness is the sense of unity of psychic elements, supported by the unity of the organism, and illustrated it by showing that there are three ways in which this unity may be lost, so that a new consciousness supervenes. The conclusion from all this evidently is, that, while psychic elements are manifested to us directly only through consciousness, they exist as its pre-conditions; and, therefore, are not to be denied existence beyond the sphere of consciousness. This sense of unity does, indeed, come and go with our food and breath, and, so far as sense can testify, ceases when we sleep and when we die, for as an ancient sage has said, "Sleep is the image of death." But while we sleep the psychic elements that consciousness unifies in our waking hours do not cease to be. Who shall say that they shall cease to be in that last sleep whose morning never dawns on earthly hills? Unconscious we were born into this world, and its pain and chill were our first greeting. Unconscious ante-natal elements were the fountain from whose secret springs personality emerged with its rational powers and ancestral similitude. Either a miracle is wrought with every first sensation, breaking the sequence of causation that connects child with parent, or the promise and potency of a human spirit were centred in the embryonic organism. Unless every analogy of nature is violated, what we call the soul had its being long before it came to consciousness.

The Belief in Metempsychosis.

It may be that this is the truth that underlies the ancient doctrine of pre-existence and metempsychosis. It is almost startling to observe the extent to which this doctrine has been accepted. In a recent essay upon the subject, Professor

Knight, of St. Andrews, says: "It has lain at the heart of all Indian speculation on the subject, time out of mind. It is one of the cardinal doctrines of the Vedas, and one of the roots of Buddhist belief. The ancient Egyptians held it. It is prominent in their great classic, the *Book of the Dead.* In Persia, it colored the whole stream of Zoroastrian thought. The Magi taught it. The Jews brought it with them from the captivity in Babylon. Many of the Essenes and Pharisees held it. Though foreign to the genius both of Judaism and Christianity, it has had its advocates (as Delitzsch puts it) as well in the synagogue as in the church. The Cabbala teaches it emphatically. The Apocrypha sanctions it, and it is to be found scattered throughout the Talmud. In Greece, Pythagoras proclaimed it, receiving the hint probably both from Egypt and the East; Empedocles taught it; Plato worked it out elaborately, not as a mythical doctrine embodying a moral truth, but as a philosophical theory or conviction. It passed over into the Neo-Platonic School at Alexandria. Philo held it. Plotinus and Porphyry in the third century, Jamblicus in the fourth, Hierocles and Proclus in the fifth, all advocated it in various ways; and an important modification of the Platonic doctrine took place amongst the Alexandrians, when Porphyry limited the range of metempsychosis, denying that the souls of men ever passed downwards to a lower than the human state. Many of the fathers of the Christian Church espoused it; notably Origen. It was one of the Gnostic doctrines. The Manichæans received it, with much else, from their Zoroastrian predecessors. It was held by Nemesius, who emphatically declares that all the Greeks who believed in immortality believed also in metempsychosis. There are hints of it in Boethius. Though condemned, in its Origenistic form, by the Council of Constantinople in 551, it passed along the stream of Christian theology, and reappeared amongst the Scholastics in Erigena and Bonaventura. It was defended with much learning and acuteness by several of the Cambridge Platonists, especially by Henry More. Glanvill devotes a curious treatise to it, the *Lux Orientalis.* English clergy and Irish bishops were found ready to espouse it. Many English poets,

from Henry Vaughan to Wordsworth, praise it. It appealed to Hume as more rational than the rival theories of creationism and traducianism. It has points of contact with the anthropology of Kant and Schelling. . . . Passing from the schools to the instinctive ideas of primitive men, or the conceptions now entertained by races half-civilized or wholly barbarous, a belief in transmigration will be found to be almost universal. It is inwoven with nearly all the mythology of the world. It appears in Mexico and Thibet, amongst negroes and the Hawaiian Islanders. It comes down from the Druids of ancient Gaul to the Tasmanians of to-day. The stream of opinion, whether instinctive, mystic, or rational, is continuous and broad; and if we could legitimately determine any question of belief by the number of its adherents, the *quod semper, quod ubique, quod ab omnibus*, would apply to this more fitly than to any other" (*Essays in Philosophy*, pp. 323, 326).

The Theory of "Metakinesis."

But we cannot terminate our inquiry by the acceptance of this ancient doctrine of pre-existence and transmigration. This is as much a matter of speculation as any other theory and is attended with embarrassments of a peculiar nature. It is cited to show how strong the conviction of men in all times has been that the mind of man neither arises as an uncaused phenomenon nor finds its cause in the movements of matter. A scientific writer of highly accredited authority, Professor Lloyd Morgan, of Bristol, in his late work on *Animal Life and Intelligence*, has stated a theory which does justice to the principle of causation, whatever may be said of it from other points of view. "It is generally admitted," he says, "that physical phenomena, including those which we call physiological, can be explained (or are explicable) in terms of energy. It is also generally admitted that consciousness is something distinct from, nay, belonging to a wholly different phenomenal order from, energy. And it is further generally admitted that consciousness is nevertheless in some way closely, if not indissolubly, associated with special

manifestations of energy in the nerve-centres of the brain. Now, we call manifestations of energy 'kinetic' manifestations, and we use the term 'kinesis' for physical manifestations of this order. Similarly, we may call concomitant manifestations of the mental or conscious order 'metakinetic,' and may use the term 'metakinesis' for all manifestations belonging to this phenomenal order. According to the monistic hypothesis, ***every mode of kinesis has its concomitant mode of metakinesis, and when the kinetic manifestations assume the form of the molecular processes in the human brain, the metakinetic manifestations assume the form of human consciousness.*** All matter is not conscious, because consciousness is the metakinetic concomitant of a highly specialized order of kinesis. But every kinesis has an associated metakinesis; and ***parallel to the evolution of organic and neural kinesis there has been an evolution of metakinetic manifestations culminating in conscious thought***" (p. 467).

This doctrine may be restated in other terms as follows: Being is essentially one, but has two aspects; one of these is known to us as physical energy (kinesis) and may be represented by the convex side of a curve; the other is known as a psychical concomitant (metakinesis) and may be represented by the concave side of the curve. Neither can exist without the other, any more than a line can be convex on one side without being concave on the other. They are correlated aspects of the same reality. At its lower stages of development, this reality does not manifest to us its psychic side, because that can be known only to a subject, that is, to a being in whom the psychic elements are converged and unified in a consciousness. But at that level of development where the psychic aspects of the modes of being are unified into a consciousness, this aspect of being becomes directly known. But it is never known except subjectively. The psychic life of other men can be known to us only through expressive movements of voice, gesture, and significant signs. The only mind that any man can know is strictly his own mind. All else is inference. But it is necessary inference, for we also convey our ideas through these same media and can explain the responses we receive only on the supposition that thought

answers to thought and feeling to feeling. The genesis of a personal being consists, then, not in the transmutation of physical force into psychic states, as materialism represents, but in the concentration and unification of pre-existing psychic elements, which in their isolation are unconscious, into a conscious individual. Now my thesis is simply this:

Consciousness is a complex phenomenon, not a simple state. It is made up of elements or factors which *become* consciousness in their union, but are *not* consciousness in their isolation. A single ray of light does not produce a visual image, but a great number of rays of light, arranged in a given order, do produce such an image. In like manner, the psychic aspect of a single brain-cell is not a consciousness, but the psychic aspects of a great many cerebral cells, unified through the organic unity of an organized brain, become a consciousness. This is accomplished through the biological processes which build up the living organism. The whole significance of a nervous system consists in this, that it focusses energy in such a manner that its psychic concomitants acquire unity. The incarrying nerves furnish appropriate conductors for those modes of molecular energy which stimulate the several senses; so that light, sound, and impact are brought to consciousness at the centres where they are converged. Thus man becomes a microcosm in which the extended world mirrors itself within the limits which are set by his present constitution. Thus also he becomes not only the interpreter, but the interpretation of the world.

Monistic Realism.

If this theory be regarded as merely an assumption, it stands upon no lower plane than all rival theories. The materialistic view, that matter becomes conscious without containing psychic elements, is an assumption without proof and without logical consistency. The idealistic view, that the world of objects is simply a fiction of conscious mind, is equally devoid of proof and probability. But the crucial question is, which assumption is most harmonious with the whole body of facts? If we carry back be-

yond the threshold of verifiable knowledge the same ideas of causation, order, continuity, and development which dominate in the realm of inductive science, we find it impossible ever to lose the conception of being, or to reduce it to that of non-being, or to eliminate from it the idea of energy on the one hand and intelligence on the other. If our thought ever obtains a resting-place without violating the laws of thought, it must be in the ultimate idea of One Self-existing Reality, the primal fountain whence all multiform and dependent beings have their source.

That causative action should ever arise from nothing, that chaos should ever beget a cosmos, that the motion-of-objects should ever transform itself into the sense-of-motion and this into the consciousness-of-motion, — are propositions that set at naught every canon of scientific thinking. The doctrine of evolution, which has been applied so successfully to the morphology and descent of organisms, seems to apply equally to the morphology and descent of mind; for organic and psychic changes, neurosis and psychosis, run *pari passu* wherever we can trace them. The philosophy based upon merely mechanical conceptions regarded the cause of the world as a *Deus ex machina*, standing outside the finite order of events and acting in some inconceivable way upon a primeval chaos; which, by external touches, has been transformed into a cosmos. The philosophy based upon biological conceptions derives all life from pre-existent life, all thought from pre-existent thought, and finds no chaos because it reaches no limit to the sweep and operation of law. The former represented the Creative Power as outside of the world, wholly sundered from it, and transcendent only. The latter represents the Creative Power as in the world, immanent in man as well as transcendent over him, a Power "in whom we live and move and have our being," and "who is not far from every one of us," for we "are also his offspring."

Does Monism extinguish God and the Soul?

Two questions of the deepest interest this monistic doctrine may be required to answer: (1) Can we suppose in harmony

with this view that to the unity of the world's energy there is any corresponding unity of world-consciousness? and (2) Can we believe consistently with this theory that when that unity of consciousness which we call human personality is once broken by death it can ever be restored? In simpler terms, does it exclude a conscious intelligence presiding over the universe? and does it admit the possibility that death is not an eternal sleep?

All thoughtful men will admit that, upon any hypothesis, scientific answers to these questions are hardly to be expected, because they lie beyond the sphere of present experience. It is perhaps sufficient to say that the order of ideas proposed in this essay is no more hostile to affirmative answers to both these questions than any other scheme of thought. Evolution along lines of ascending life, upon which we must all agree, seems to imply the existence of plan and purpose, of means and end, of rational agency and intelligent finality. If all physical movements (kinesis) are accompanied with psychic concomitants (metakinesis), and these may have foci in human consciousness, it would be very bold to say that they have no other focus, that is, that there is no superhuman or cosmic consciousness. And, as we know nothing of the area through which energy is extended, who can say where such a focus may not be? And who can affirm that, in an Infinite Being, the focus may not be everywhere? Or, since our geometry is built upon finite space-forms, who can say that it may not be without having any space-relation? If, indeed, this be a universe in which we dwell, and not a heap of isolated *disjecta membra*, is it not a necessity of thought that, the system of energy being totally inter-related, so also the psychic concomitants which the hypothesis requires must also have their unity?

The other question may be thrown into this form: If reason and justice and beneficence have had and do have place in human life and history, does not the principle of continuity require that they do not cease before their fulfilment is achieved? May we not then suppose that personal consciousness, new-born every morning and relinquished every night, *may be resumed so*

long as its great purpose is unfulfilled? The whole process of psychic evolution is a continuous transfer of function from less to more refined, complicated, and specialized vehicles. Our most recent science has opened to us the reality of an invisible world. It is certain that there are vibrations at both ends of the spectrum of light which we do not apprehend, because our organs of sight are not adapted to them. The ether is as real as ponderable matter. We are enabled to analyze the light of stars which were never beheld by human eye. Until we know more of what we call "matter" and "energy" than we do at present, who will be so adventurous as to say that the last vehicle to which psychic action can be transferred, and the only medium to which the unity of consciousness can be attached, are the ponderable but unstable compounds that constitute the living brain? It is true that experience here finds its limit and before our eager vision the curtain falls. But perhaps the ancient wisdom was not far from the heart of truth which inspired the poet to sing:—

> As large as is the unbounded Universe,
> So large that little, hidden Spirit is!
> The Heavens and Earth are in it! Fire and air
> And sun and moon and stars, darkness and light,
> It comprehends! Whatever maketh Man,
> The present of him, and the past of him,
> And what shall be of him, — all thoughts and things
> Lie folded in the ethereal vast of it.
>
> And, if they say: What then is left of it
> When eld upon the Body's City creeps,
> And breaks and scatters it: and all its walls
> Fall: and the Palace of the Heart is void,
> Where dwell the being, the desire, the life,
> This Royal Spirit's Kingship?
>
> Answer them:
> By mortal years the Immortal grows not old!
> The Âtman changes not! The Body's death
> Kills not the soul! It hath its City, still,
> Its Palace, and its hidden, proper life!

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THE PROBLEM OF EPISTEMOLOGY.[1]

THE problem of epistemology arises from the very nature of knowledge. Knowledge implies a reference to that which is known, and which is therefore to be distinguished from the knowledge itself considered subjectively as an act or process of the being who knows. What is known, the object of knowledge, may be styled most generally Reality. Knowledge bears in its heart, in its very notion, this reference to a reality distinct from itself. No idealist will deny, at all events, that knowledge *seems* to us to carry this reference with it. Hume himself speaks of it as "the universal and primary opinion of all men," it is "a natural instinct or presupposition,"[2] so that if its validity is not accepted, the *illusion* will at least require explanation. Knowledge as knowledge points beyond itself to a reality whose representation or symbol it is. This holds true, as a careful analysis would show, even in what is called self-knowledge, the reflective knowledge of one's own states, in which the act of knowledge and the object known might seem to fall together. But, without insisting at the outset on this refinement, let us take the general or typical case, in which the knowledge is knowledge of beings other than ourselves, a knowledge of the facts of the world around us. Here the very function of knowledge, as ordinarily understood, is to disclose to one being the nature of beings and things with which he is in relation, but which are different; *i.e.* numerically and existentially distinct from himself. One being or individual cannot go out of himself, so far as his being or existence is concerned. He is and remains himself so long as he exists at all. But though every individual, *quâ* existent, remains thus anchored upon himself — rooted to his own centre, to the locus, as it were, assigned him

[1] This article connects itself with the previous paper on "Psychology, Epistemology, and Metaphysics," which appeared in the second number of this journal.

[2] Enquiry, section 12.

in the process of the universal life — yet by the influence of other realities upon him and the response of his own being to these influences, — in other words, by means of his own subjective states, and without therefore performing the impossible feat of stepping out of himself, — he becomes aware of other existences, or, as we say, he comes to know that other beings or things exist besides himself, and also what their nature is. This knowledge, as knowledge, is necessarily subjective, for no being can be present *in existence* within another being. In existence things necessarily remain apart or distinct: we *can* know things, therefore, only by report, only by their effect upon us.

That, then, is the problem or crux of knowledge which has vexed philosophers. Knowledge is necessarily subjective, so far as it is state or process of the knowing being; but it as necessarily involves an objective reference. If it is not an illusion altogether, it is a knowledge of realities which are trans-subjective or extra-conscious; *i.e.* which exist beyond and independently of the consciousness of the individual knowing them. But all through the modern period philosophers have been turning the subjectivity of knowledge against its objectivity, and in the last resort converting the very notion of knowledge into an argument against the possibility of knowledge. If they have not gone to this extreme length, the possibility of real knowledge has been an ever present difficulty to modern thought, — a difficulty that has seemed to grow greater instead of less in the hands of successive thinkers, till it may be said since the time of Hume and Kant to have been the main subject of philosophical debate. Now, it can scarcely be doubted that in this respect philosophy has largely created the difficulties which it finds so hard to surmount, but at the same time we cannot wonder at or regret the time and labor expended on this question; for it is the business of philosophy to doubt wherever doubt is possible, and to probe its own doubts to the bottom, in order to discover whether they are really fatal to the faith we repose in the act of knowledge. A theory of knowledge or a philosophy of belief is a necessary preliminary of all scientific and metaphysical inquiry.

In endeavoring to establish such a theory, we must start from the ordinary consciousness. What does the plain man believe about perception and the real world of physical things? He believes that his senses, especially sight and touch, put him in immediate relation with real things. He has only to open his eyes or to stretch out his hand, and he is face to face or in actual contact with the realities themselves. The objects which he perceives are not dependent upon his perceiving them, which is a purely accidental fact both in their life-history and in his. Just as he himself existed as a real being before the act of perception, so they existed independently before he turned his eyes upon them, and they continue to exist after his vision is averted. He believes, in short, that he sees and touches the real thing as that exists in itself independent of perception. He draws no distinction between the existence of the thing in itself and its existence for him in the moment of perception. The appearance *is* the reality. "The vulgar," as Hume says, "confound perceptions and objects, and attribute a distinct continued existence to the very things they feel or see."[1] "'Tis certain," he says again, "that almost all mankind, and even philosophers themselves, for the greatest part of their lives, take their perceptions to be their only objects, and suppose that the very being, which is intimately present to the mind, is the real body or material existence. 'Tis also certain that this very perception or object is supposed to have a continued, uninterrupted being, and neither to be annihilated by our absence nor to be brought into existence by our presence."[2]

No doubt this is, as Hume says, the belief of "*the* vulgar"; it is what Mr. Spencer calls Crude, and what other writers call naïve or uncritical Realism. As such, it contains much that is untenable, and much that requires more careful sifting and definition. But what we have to note is that it is a primary, instinctive, and irresistible belief of all mankind, nay of the whole animal creation. Hume himself characterizes Realism as "a natural instinct or prepossession" which operates "without any reasoning or even almost before the use of reason."[3]

[1] Treatise, Part IV. section 2. [2] *Ibid.* [3] Enquiry, section 12.

Even the sceptic, he says again, "must assent to the principle concerning the existence of body, though he cannot pretend by any arguments of philosophy to maintain its veracity. Nature has not left this to his choice, and has doubtless esteemed it an affair of too great importance to be trusted to our uncertain reasonings and speculations." [1] It may be matter for consideration at a later stage whether the mere fact of this universal, primary, and ineradicable belief is not itself an element in the problem; except on the hypothesis of universal irrationality may it not be argued that the provision of nature in this respect is hardly likely to be a carefully organized deception? But here, we are merely concerned with the *fact* of what Mr. Spencer calls the priority of Realism. It cannot be too strongly insisted that in this respect Realism holds the field. As Mr. Spencer puts it, "I see no alternative but to affirm that the thing primarily known, is not that a sensation has been experienced, but that there exists an outer object." [2] Mr. Spencer's position here is not essentially different from that of Reid when he insists in opposition to Hume that we do not start with ideas or, as Hume calls them, perceptions — unrelated mental states — but with judgments. Judgment, he argues, is the primitive act of mind and a knowledge of sensations *per se* is only reached at a much later stage "by resolving and analyzing a natural and original judgment." As I put it on a previous occasion, "we do not begin by studying the contents of our own minds and afterwards proceed by inference to realities beyond. We are never restricted to our own ideas, as ideas; from the first dawn of knowledge we treat the subjective excitation as the symbol or revealer to us of a real world." [3]

Mr. Spencer, in the chapter from which I have quoted,[4] gives an admirable exposure of the fallacy which underlies the opposite view. "The error has been in confounding two quite distinct things, — having a sensation, and being conscious of having a sensation." Certainly, sensations must be given as

[1] Treatise, Part IV. section 2. [2] Principles of Psychology, Vol. II. p. 369.
[3] Scottish Philosophy, p. 103 (2d ed.).
[4] Principles of Psychology, Part VII. chap. 6.

the conditions of perception or knowledge; they are unquestionably the immediate data upon which the perceptive judgment reposes. Mr. Spencer, it is true, guided by his idea of evolution, projects his imagination into "the dark backward and abysm of time" and seems to teach that "the simple consciousness of sensation, uncomplicated by any consciousness of subject or object, is primordial," and that, as he puts it, "through immeasurably long and complex differentiations and integrations of such primordial sensations and derived ideas, there develops a consciousness of self and a correlative not-self." But, as he adds, "it is one thing to say that in such a creature the sensations are the things originally given, and it is quite another thing to say these sensations can be known *as sensations* by such a creature." Such an argument "identifies two things which are at the very opposite extremes of the process of mental evolution." It is, in fact, only the psychologist who in his reflective analysis is conscious of sensations as sensations distinguished from and referred to their external causes. And we have here an example of what Professor James has dubbed "the psychologist's fallacy *par excellence*," — the confusion by the psychologist of his own standpoint with that of the mental fact about which he is making his report. Mr. Spencer lays his finger most effectively upon the fallacy in the present case. But for myself, I question whether he does not go too far in admitting an undifferentiated sensuous consciousness as the primordial fact in the evolutionary process. It is in vain that we project our imaginations towards such a hypothetical beginning: it has nothing in common with what we understand by knowledge, and is therefore perfectly unrealizable by us. Being thus totally heterogeneous, it cannot form a step on the road to knowledge: I mean that it does not in any sense pave the way for it or render the emergence of cognition easier to conceive. Whether we interpolate this hypothetical sensuous consciousness as a time-prius or not, the appearance of perception or cognitive consciousness — the consciousness we know — remains equally an unexplained beginning, an absolute *μετάβασις εἰς ἀλλὸ γένος*.

It is not an essential point in our present argument, but I am disposed to question whether any animal consciousness can be fairly described as a "simple consciousness of sensation," that is to say, a state of pure internality, of diffused inward feeling, without a germinal consciousness of distinction between the feeling self and its surroundings. There is no question here of the developed or reflected consciousness of Ego and non-Ego, but only of that animal awareness of objective facts which is seen in reaction upon stimuli and in purposive adaptation of act to circumstance. It is in action that we have the surest clew to the early stages of the animal and the human consciousness. Knowledge in such creatures exists simply in a practical reference. Consciousness would be a useless luxury unless as putting them in relation to the surrounding world and enabling them to adapt their actions to its varying stimuli. In point of fact, this practical consciousness, so far as we can judge, accompanies animal life from the outset. At least we cannot even imagine a consciousness without the objective reference; *i.e.* without a felt distinction between the feeling subject and an object which it feels — something different, of whose presence to it it is aware. Once more let it be repeated, we are not speaking of the reflective realization of those distinctions which comes so much later — which comes to the non-human animal not at all, and to human beings only intermittently; we are speaking of the instinctive or direct consciousness which all living creatures possess (in greater or less degree) for the practical ends of living, to enable them to respond to external stimulus and to adapt themselves to their surroundings. Put on this broad ground, it may be said that the *reaction* of the sensitive organism is the practical recognition of an independent object, — it is the first or earliest form which that recognition takes. Further, there seems no reason to doubt that it is the contrast of activity and passivity, — of resistance encountered and instinctive effort put forth against the resistance, to which may be added the contrast of want and satisfaction, of restless craving and the stilling of appetite by its appropriate gratification, — it is these contrasts which awaken

and intensify the distinction between the sensitive subject and objects independent of itself. The infant whose pains of deprivation are ended by the presentation of the mother's breast, the snail which puts forth its horns and comes in contact with an object in its path,[1] are alike in a fair way towards realizing the existence of independent objects. It may be taken as pretty generally acknowledged that the consciousness of independent externality is given chiefly in the sense of effort and the phenomena of resisted energy. Here we see the category of causality, as it were, alive before us in instinctive action. Hence, as Mr. Spencer says, "the root-conception of existence beyond consciousness becomes that of resistance *plus* some force which the resistance measures."[2] Of such a simple quasi-reflex character are the experiences which "yield subject and object as independent existences."[3] We do not require to go for them to the rational consciousness of man. In reacting upon a stimulus, the sensitive subject projects or reflects its feeling out, interprets it as the sign of an independent somewhat. In this sense we may agree with Mr. Spencer that "the Realistic interpretation of our states of consciousness" is "deep as the very structure of the nervous system, and cannot for an instant be actually expelled";[4] or, as Professor Laurie puts it, the affirmation of independent externality is a necessary reflex movement of sense. "By a *reflex* action of consciousness things are constituted objects and external. This movement, moreover, lies in the heart of consciousness; and through it alone is consciousness possible."[5]

This being so, then — Realism being incontestably prior — philosophical reflection supervenes, and subjects this primitive and instinctive consciousness to a sceptical criticism, which aims either at establishing some form of Idealism or at reducing us to complete Scepticism. This criticism, as already remarked, is both salutary and necessary; for if Realism is

[1] An example of Professor Laurie's.
[2] Principles of Psychology, Part VII. chap. 18.
[3] *Ibid.*, chap. 13. [4] *Ibid.*, chap. 14.
[5] Metaphysica Nova et Vetusta, p. 74 (2d ed.).

to justify itself it must do so at the bar of Reason: it cannot save itself by a mere appeal to instinctive or unreasoned belief, especially when that belief may be seen at a glance to involve a number of unscientific and untenable assertions. Reflective criticism brings to light important and undeniable distinctions which are ignored in the primitive realistic beliefs of the race. The philosophical thinker will avail himself gladly of these distinctions to purge the crude or instinctive doctrine of the unscientific elements which bring it into discredit, while at the same time he endeavors, in view of this idealistic criticism, to state in an unexceptionable form the indestructible elements of truth which he believes the original belief to contain. In regard to this indestructible basis of truth he must meet the criticisms of the idealist by showing that Idealism as an epistemological doctrine *only exists as a criticism of Realism*, and derives any plausibility it possesses from the surreptitious or unobserved importation into its statement of our ineradicable realistic assumptions. Were it not for these assumptions the idealistic theory could not be stated in words. Idealism is really an attempt to obliterate the distinction between knowing and being, which it finds established in common belief and in the realistic theories. The gist of epistemological Idealism is that the knowing is the thing known; that being known to different consciousnesses is the only being or existence of the object; that cognitive states of a number of conscious beings exist, but that the "it," the object which we ordinarily suppose these cognitive states to refer to — which we suppose to be known by means of these cognitive states — is nothing beyond the cognitive states themselves.[1] Now on such a theory it is pretty evident that the distinction of Knowing and Being, of independent subject and object, would never have arisen, and would not have required therefore to be explained away. Hence, it may be repeated, Idealism exists only as a criticism of Realism. When developed itself as a substantive theory, it leads to a view of existence which is a *reductio ad absurdum*

[1] Obviously on such a hypothesis the designation "cognitive" applied to the states is no longer appropriate, since they have ceased to be the instruments of knowledge.

of the doctrine in question. By such a line of argument Realism is left in possession of the field, and a critical or carefully guarded Realism is established as the only satisfactory, indeed the only sane, theory of knowledge.

The considerations on which a sceptical idealism, or an idealistic scepticism, founds are sufficiently obvious, and by no means profound. As Hume puts it, the "universal and primary opinion of all men is soon destroyed by the *slightest* philosophy."[1] Possibly, therefore (to adapt Bacon's maxim), if a little philosophy inclines men's minds to idealism, depth in philosophy may bring them back to Realism. "The slightest philosophy teaches us," Hume proceeds, "that nothing can ever be present to the mind but an image or perception, and that the senses are only the inlets through which these images are conveyed, without being able to produce any immediate intercourse between the mind and the object." In other words, and to put it more modernly, the special arguments by which idealism is enforced are drawn from the physiology of the sense-organs. The general position on which it rests is that, physiologically, knowledge has for its immediate conditions certain processes in every organism, and, psychologically, knowledge consists of certain subjective experiences *in me* (whatever that may precisely mean, some denying the *me* and asserting simply the subjective experiences as such). As Hume says, we never get "any immediate intercourse between the mind and the object." Consciousness, as such, is shut up to its own contents or constituents. What transcends consciousness, *i.e.* any existence which is other than consciousness cannot be *in* consciousness; albeit the ordinary naïve idea seems to be that consciousness, as it were, goes out of itself, and actually lays hold of things, or throws its net over them. In literal fact, however, this is not so. The psychical experiences which constitute knowledge are one thing, and, according to the doctrine of a Realism that understands itself, the thing known is another. Their distinction is undeniable, though an ill-advised Realism and an all-advised Idealism alike try to

[1] Enquiry, section 12.

undermine it or to explain it away. In fact, as we saw at the outset of this paper, the distinction may be said to be involved in the very nature or notion of knowledge. Knowledge means nothing if it does not mean the relation of two factors, knowledge *of* an object *by* a subject. But knowledge is not an entity stretching across, as it were, from subject to object, and uniting them; still less is knowledge the one reality of which subject and object are two sides or aspects. Knowledge is an activity, an activo-passive experience of the subject, whereby it becomes aware of what is not itself. The cognitive state is thus related psychologically to the subject whose state it is, and epistemologically to the object of which it is the knowledge. Epistemologically there is a union of subject and object: the knower and what he knows are in a sense, as Aristotle says, one. But ontologically, or as a matter of existence, they remain distinct — the one here and the other there — and nothing avails to bridge this chasm. The chasm, it is true, is not an absolute one, otherwise knowledge would be forever impossible. Across the inane there is no bridge. Both subject and object are members of one world. That may be taken as the ultimate and unavoidable presupposition. But separation and difference are the very conditions of knowledge; if it were not for the difference where would be the need of knowledge? Each thing would actually *be* everything else, or rather "each" would be an impossible conception. The *ὁμοῦ πάντα* of Anaxagoras would be realized in a more intimate and literal sense than its author ever imagined; all things would be together, an indistinguishable conglomerate of mutual interpenetration. It is individuation, distinctness in existence, that calls for knowledge and gives it scope. Feelings, images, ideas, beliefs, volitions — these are the components of consciousness, they have an existence of their own, but it is a mode of existence generically distinct from that we attribute to things as real beings, whether material or spiritual. By *means of* certain of these conscious facts — those called cognitive — the being in whom they occur believes that he is made aware of the existence, nature, and actions of existences other than himself.

But he cannot by any possibility step out of himself and pass over into these other existences, or draw them into himself. In this respect Matthew Arnold's lines are as true as they are poignantly beautiful:—

> Yes! in the sea of life enisled,
> With echoing straits between us thrown,
> Dotting the shoreless watery wild,
> We mortal millions live *alone*.
> The islands feel the enclasping flow,
> And then their endless bounds they know.

But, as I have said, to wish to overpass these limits is to rebel against the very nature of selfhood, and epistemologically to kick against the very notion of knowledge. That very self which is a principle of isolation in existence is the principle on which all communion, all fellowship rests, alike in knowing and in feeling. But knowledge is not a fusion of knower and known, nor is it all explained by being regarded as a kind of physical continuity or immediate contact between the knowing subject and the object known. Though science may prove all perception to be dependent on the existence of a physical medium between the object perceived and the sense-organs, thus reducing all the senses to varieties of touch, the psychical facts which result are yet totally different, and as it were apart from the series of physical movements from which they result. Physical nearness or remoteness does not affect the epistemological question. The table which is in immediate contact with my organism is as completely and inexorably outside the world of my consciousness as the most distant "star and system" visible upon the bosom of the night. Though I press my hand against it, it is no more *present in* consciousness than is the friend on the other side of the globe whose image rises at the moment in my mind. There are in fact two worlds, and to that fundamental antithesis we return. To the one world belong, in Berkeley's language though not in Berkeley's sense, all the choir of heaven and furniture of the earth, to the other the thoughts and feelings of the individual who is consciously aware of this system of things in which he himself draws his breath and has

his place. To use the well-worn words, there is the macrocosm and there is the microcosm. Ontologically or metaphysically, the microcosm must necessarily be viewed as a dependent part or function of the mighty whole; but epistemologically the microcosm rounds itself off within itself, and constitutes in perfect strictness a little world of its own. The world of consciousness, on the one hand, and the (so far hypothetical) world of real things, on the other, are two mutually exclusive spheres. No member of the real sphere can intrude itself into the conscious sphere, nor can consciousness go out into the real sphere and as it were lay hold with hands upon a real object. The two worlds are, to this extent and in this sense, totally disparate.

As soon as this is clearly recognized — and as Hume says, no very profound philosophical reflection is needed to reach this stage — it becomes evident that Realism cannot be maintained as a philosophical hypothesis in the uncritical form which it assumes in the mind of the plain man. And so far as the Realism of Scottish philosophy is merely an uncritical reassertion of our primitive beliefs, it is not to be wondered at that succeeding philosophers have so frequently treated their speculations as a negligible quantity. Immediacy must be given up before any tenable theory of perception and any philosophical doctrine of Realism can be established. The truth of the idealistic contentions must be acknowledged. It must be granted that in passing from the real to the ideal there is a solution of continuity, a leap, a passage from one world to another. The world of real things is transcendent with reference to the world of consciousness; the world of objects (as we customarily, though ambiguously speak of it) is trans-subjective or extra-conscious. In other words, it falls absolutely outside of, or beyond, the little world of consciousness, and the conscious being cannot in the nature of things overleap or transcend itself. The knowledge which we call most immediate or direct is only relatively so; so far as it is knowledge, it is mediate, or the result of a process. Knowledge puts a man in relation with things through the medium of his perceptions, but his perceptions are not the things; he does not pass over into the things, nor do the things

pass over into him. At no point can the real world, as it were, force an entrance into the closed sphere of the ideal; nor does that sphere open at any point to receive into itself the smallest atom of the real world, *quâ real*, though it has room within itself *ideally* for the whole universe of God.

A critical Realism must start then with the acknowledgment of this fact. This is the truth which both Locke and Kant had got firm hold of. It is the basis of Locke's hypothetical Dualism, and, so far as our present argument is concerned, Kant's relativistic phenomenalism with its inferential background of things-in-themselves is substantially a similar theory with the sceptical suggestions of Lockianism unfortunately emphasized. From Locke and Kant as centres the epistemological speculations of modern philosophy may be conveniently viewed. Now, unquestionably, the transcendence of the real does give scepticism its opportunity. Scepticism takes up its position in the gap thus apparently made between the ideal and the real, and asks how we know that we know the *real* things, what assurance have we that the world of real things is as it appears to us to be, nay, in the last resort, what assurance have we that there is a world of real things at all. This sceptical insinuation requires to be fairly met, for, however little it avails to shake our practical certainty, the theoretic possibility of such a doubt lies in the very nature of the case. So long as the knower and that which he knows are not identical, so long is it possible that his knowledge may not be true, *i.e.* may not correctly render the nature of what is. Hence a succession of attempts to dispense with the otherness or transcendency of the object known. Thus we find Berkeley inveighing against this "groundless and absurd notion" as "the very root of scepticism."[1] The arguments used by sceptics in all ages, he says, depend on the supposition of external objects.[2] The temptation accordingly is to abolish the independent world of real existences altogether, and to manipulate our perceptions or ideas in such a way as to make them stand in its place. This is the plan we find adopted by Berkeley partially, and in more thorough-going fashion by Hume. Berkeley and Hume have

[1] Principles of Human Knowledge, section 86. [2] *Ibid.*, section 87.

been modernized by Mill. It was this sceptical development of Locke's "way of ideas" that drove some Scotch philosophers to seek refuge in the theory or no theory of Immediate Perception. By thus putting the mind with its nose up against things (to use a homely but graphic phrase of Von Hartmann's) they sought to cut off the very possibility of doubt. But this is to cut the Gordian knot in an inadmissible way. The doubt has been raised and is plainly possible. This is fully admitted and stated with admirable clearness by Hamilton, even while insisting most strenuously upon the testimony of consciousness to a duality of existence. "The facts of consciousness," he says, "are to be considered in two points of view, either as evidencing their own ideal or phenomenal existence, or as evidencing the objective existence of something else beyond them. A belief in the former is not identical with a belief in the latter. The one cannot, the other may possibly be refused. In the case of a common witness we cannot doubt the fact of his testimony as emitted, but we can always doubt the truth of that which his testimony avers. So it is with consciousness."[1] Hence to shout Immediate Perception is no reply. It is to seek an imaginary security by shutting one's eyes to the danger, instead of boldly facing it. A more legitimate method is to show the inadequacy of the idealistic substitutes for a trans-subjective real world, to show, as I said before, that it is only in virtue of their borrowings from Realism that they can be stated and discussed. This indirect proof, proceeding by the exclusion of other possible theories, is declared by Hartmann[2] to be the only way in which a critical Realism can be firmly established; or, to put it otherwise, the doubt must be redargued by showing its ultimate scope. This is to a certain extent what Reid does, and it is in his criticisms of the ideal theory conceived in this spirit, and not in his dogmatic assertion of immediate perception, that we must recognize his philosophical merit and his philosophical importance.

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[1] Lectures on Metaphysics, I. p. 271.

[2] See his *Kritische Grundlegung des transcendentalen Realismus*, and his *Grundproblem der Erkenntnisstheorie, passim.*

THE ORIGIN OF PLEASURE AND PAIN.

II.

IN the last number of the REVIEW we gave evidence for specific pain nerves distributed throughout the body, for the probability of pleasure nerves in certain places, and for the possibility of such in all our sense-organs. We concluded that most of our æsthetic feelings are not sensations, but are associative central occurrences. It is this major part of æsthetics which we have now to account for. At once we say that the present distribution of pain and pleasure nerves in our body does not seem sufficient for this purpose. Holding fast to a common mode of origin for all our senses, we must, then, look further into biological development for our desired explanations.

Human anatomy and physiology were closed secrets till study of a long line of embryonic and morphologic modifications revealed them. It should be evident that human psychology can never be understood except by a like tracing out of present from past conditions. Since Darwin, 'the first sense' has been frequently discussed, but, on the whole, in a manner bringing the subject little credit. The first organs of sense, however, have long been the objects of sober biological research. As it is our task only to discover how pleasure and pain came to do what they now do, we may escape discussion of early amorphous creatures. We need not go outside of our line of ancestry, nor back of its first organized sensory system.[1]

[1] Should we go back of this period, we would find further grounds of probability for the theory to be put forward in this paper. The creature whose primary neural activities were best suited to the primary needs of organic evolution, would prosper most in organic development. A single sense, which was susceptible to various kinds of influences, would be of greater use than another susceptible to a single kind of influence. Also, the sense best adapted to mediating the particular range or degrees of influence most beneficial to the creature, would be of most service to it. Thus pain, though it be susceptible to as many kinds of influence as is pleasure, yet, since it is adapted to mediate the extreme rather than the medium or major ranges of influence playing upon animal organism, it would be less profitable as a primary

It is not easy to tell, for the animal kingdom at large, what sense-organs came first. Many cœlenterates have eyes, while certain annelids, standing far higher in the line of morphologic development, have no eyes. But it is fortunate for our present purpose that, though the exact line of human ancestry is not known, biological opinion now speaks conclusively for an annelid type at one stage, having a simple nervous system. The earthworm, though probably not our identical ancestor, may show us what that creature would be like.

This worm has a well-defined and relatively complex nervous system. This system comprises a lot of nerves running to and from segmental ganglia which are connected by bilateral cords. The forward ganglion is the largest, and may be called the brain. The peripheral ends of its sensory nerves terminate, so far as can be discovered, in simple cells of like nature throughout. There is no evidence of other specific sense energies than those which may be mediated by this apparently homogeneous sense system. By means of this, the creature digs, eats, procreates, is a respectable traveller, and leads a complicated life. It does not see, hear, or smell. To say it does not experience touch, taste, heat, cold, pain, or pleasure would raise criticism respectively from the champions of each of these as the primary sense. We will only assume, then, what all seem inclined to agree to, that the worm does all that it does in terms of some one sense. And for our ancestral worm, we will leave the kind, or psychic quality, of its single sense for the present unnamed.

Our worm being provided with this kind of a nervous system, we may note that from the outset its neuro-muscular functions would divide into two contrasting classes: those which would tend to continue or to promote beneficial experiences, and those which would tend to discontinue or to inhibit baneful ones. At

sense than would pleasure. Pleasure, of all the senses we know anything about, best satisfies the demands of a primary sense, is open to more influences of the proper range. Any creature, having the pleasure sense as its primary sense, would therefore have advantages over others from the start. Man's line of ancestry certainly became possessed of the pleasure sense at some time, and appears to have had the lead since some very important epoch. It does not seem unfair, then, to use the above as a slight argument in favor of pleasure as the primary sense of our line of ancestry.

once the parallel is obvious between these and the functions commonly assigned to pleasure and to pain. But, though our creature should physically experience these contrasting functions, could it mentally experience any corresponding contrasts in terms of a single sense? I answer, "Yes"; and my grounds for this answer have, as I believe, close relationship with those facts which underlie the mental experiences commonly termed desire and aversion,—experiences by no means so coincident with pleasures and pains as is commonly conceived. It will prove of importance to our subject to clear up this matter.

I desire a horse. Here the mental image of the horse is not alone the object of the desire. This concept-object also contains ideas, more or less abstract, of somewhat that might be experienced in connection with the horse. Precisely what the somewhat is that must be added to constitute my desire would be differently stated by various authors. Some contend that this mere unobstructed dwelling-in-the-mind of any pleasant concept constitutes desire; others, that an unobstructed idea of 'mine' must be added. Others would hold that an unobstructed idea, however abstract, of 'exerting myself to realize, or to continue the concept,' or of 'making it mine,' must be contained in desire. By "unobstructed" in all these cases I mean "uninterrupted by the idea of my resisting this realization."

Now, I maintain of any mental state that it is its tendency toward an act calculated to reproduce its object, that constitutes its essential characteristic as a desire, if it be such. As we shall show, ideas of pleasant experiences, from reasons lying within the conditions of their biological development, usually do tend strongly toward acts that should reproduce their object. Here the proper tendency is emphatically innate within the idea of the pleasure alone. This is why the first class of authors are led to contend that the mere dwelling-in-the-mind of pleasure concepts is desiring. Some ideas of past experiences do not possess this tendency within themselves; therefore, concepts containing such ideas must, in order to constitute desires, also contain somewhat further that does possess such a tendency. My

desire for a horse was an example. Authors of our second and third classes are those who hit upon this kind of a desire. Yet a large number of mental states other than states of pleasure do tend innately to acts that should reproduce their objects. The impulses of children to mimic and to imitate are marked examples of such. Since it is the fundamental function of every mental event to tend to some act, since such a tendency is its own reason-to-be, biologically, we may surmise that a much larger proportion of our ideas than commonly we take note of do, during the moment of their occurrence, fall fundamentally under the category of desire; rightfully so fall, though their distinguishing tendency, being swamped in the subsequent trend of our thoughts, may consequently be lost sight of. Ideas of pain usually tend to acts that should discontinue pains like those thought of; hence, usually, ideas of pain are not desires. Yet ideas of pain may be so joined with other ideas that the whole concept shall be a genuine desire.

Our worm, then, could desire; for on his brain could be made impressions, which, when revived in memory, would tend to acts that should bring about experiences like those from which such impressions sprung. He could also hate; for from the foregoing it will plainly follow that aversions, or hates, are mental states that tend toward acts that should discontinue their objects.

It may still be contended that our worm would not itself know any difference between such desires and such aversions, transacted in terms of a single sense; that, as psychic experiences to be judged of themselves, they would not be different. But we further point out that even under this aspect the desires and aversions of the worm would display characteristics of make-up markedly contrasting with each other. Even the muscular activities executed in pursuance of these desires and aversions would betray corresponding characteristics. Our lips act differently when pressing a luscious cherry than when, accidentally, we have bitten a bitter one. We do not shake hands as we strike. The whole muscular deportment of a child actively at play is far different from one flying in fright from a dog. If all our conscious states should drop out except those of our muscle

sense, these would yet bear to us as complete significance of the various contrasting vicissitudes of life, as do our muscular activities to the common observer. As there are distinctive ear-marks common to all healthy organs, and others common to all unhealthy organs, whatever their particular functions, or whatever the animal, so there are ear-marks common to those neural activities whose function is to continue certain beneficial processes, and contrasting ear-marks for other neural activities whose function is discontinuance. And these traits hold good for all kinds of sense, and for most creatures. To follow these out and to note them would throw much light on the common mistake of identifying all desires with pleasure, and all aversions with pains. But we content ourselves here with making plain that, from the first, the desires of our worm would be of different make-up from its aversions, and that, in so far as these contrasting states were representative of like contrasts in outer events, to that degree they would constitute for the worm a knowledge of these outer differences, and would constitute its love or hate of them.

But, if the nervous organism of our creature should now be changed so that most of these occurrences which I have defined as desires should be transacted in terms of one specific sense, and those of aversion in terms of a different sense, we see at once that new and important characteristics would thus be introduced mentally distinguishing desire from aversion. In this case, we should bear in mind, however, that the essential features by which we should still test desires and hates would not lie in the facts that most desires were of one particular kind of sense, and aversions of another kind, but, as described above, in certain peculiar relations based on the corresponding physical functions which such mental states bore to other mental states.

Our worm had one sense; we have several. In light of what we know of specialization, we should now inquire whether something like what we discussed in our last paragraph did not really take place in the development of the worm to man.

We have already discovered that it is the particular function

of pains to prompt to acts that should discontinue those pains. Hardly a word more is needed in favor of the postulate that we have here a separate sensory system introduced and developed, at some time since our first or primary sense, for the special function of physical aversion or neural discontinuance. We have yet more to offer on this subject. But we will only remark here that any sense so specialized to avoidance of baneful events, would necessarily become specially 'made up' into the particular characteristics and associated with the peculiar mental experiences coming to us when baneful events occur, and would, therefore, be specially wrought up into our ideas of baneful events, and into our ideas of detriment and of aversion in the abstract. This would be the case although the pain and the pain processes would, of themselves, be as truly beneficial in essential nature as any other sense or bodily function. Indeed, our pains must be essentially beneficial, in order to have been so fundamentally and widely wrought up into our developed organism. Had their general function been detrimental, it would have become eliminated.

The origin of pleasure is not at first so clear. For it we shall have to follow the destiny of our ancestral worm more closely. At the outset we may note that whatever sense it was in terms of which our worm transacted its primary neural functions, this sense would become from the first wrought up into peculiar mental representation of beneficial occurrences. Necessarily so. For one reason: because organization adapted to beneficial occurrences is at first the only organization that is taken up and perpetuated. The more simple a creature is, the more preponderatingly must its possible experiences be beneficial, in order to survive. As the number of its possible experiences increase, the greater may the absolute number of its detrimental experiences be, and the species yet prosper. The more fundamental a function is, the more nearly invariably must it work beneficially. Primary functions must be fundamental functions. We see, then, how any primary sense, which was the mental correspondent of these functions, must be wrought up into special representation of beneficial experiences,

—how pre-eminently so above other senses subsequently added to the nervous organism for the purpose of mediating other less fundamental functions.

This, however, is but the beginning of the story. If, as we have postulated, another sense, as pain, should presently be introduced, specially to perform the functions significant of danger and of detriment, not only by this specialization would the new sense become representative of detriment, but also, in proportion, would the old sense be relieved of this class of functions. And in proportion as it would cease to perform functions significant of detriment, the less then would it be woven into detrimental experiences, and the less would it be mentally representative of detriment and of aversion. And as this occurred the more specifically, therefore, would the primary sense be representative of beneficial occurrences and of desire.

But more follows with the addition of still other senses in the development of our worm toward man. Every new sense taken up into the organism is certain to perform some function less fundamental to that organism than that performed by the primary sense. Though, on the whole, each new sense must be representative of more benefit than detriment, yet it will be far less specially representative of benefit than we have seen the first sense become after being relieved of mediating experiences peculiarly representative of detriment. Thus, sight, though enormously beneficial on the whole, continually pours in upon us a flood of experiences of no benefit whatever. We have already compared the primary sense of our worm with pleasure as developed in us. Our abstract notions, being residuary impressions of past experiences of a particular kind, are in a way fair tests of these experiences. The common notion of pleasure since philosophy began is that essentially it is the expression of our well-being. No such notion has ever arisen regarding sight. The notion is a competent indication, we think, of how much more fundamentally and representatively our first sense has been woven into our beneficial experiences, both biological and psychological, than have any of our other senses.

But we must understand this matter yet more clearly. In our ancestral worm was developed a pretty complex nervous organism, for the mediation of a pretty complex life of physical activities and of mental experiences. We must now examine how new sense systems would join in upon the old, and, in consequence, what relationships the mental experiences mediated by the new would bear to those mediated by the old. Suppose a pair of eyes should develop in the worm's head. They would be of no use biologically unless joined in some way with the motor apparatus of the creature. Either a new set of motor nerves must be developed correspondent to the new optic fibres, or the new fibres must be grafted upon the old nervous centres. We do not fear contradiction when we say that, in general, the latter was the method of rise of our different senses.

This being so, it is to be noted that, excepting those of the new organs of sight, no new acts are made possible to the body by reason of its new sensations. Its old acts, however, are stimulated to far more numerous and complicated occurrence. In so far, therefore, as formerly these acts were in turn incitive to mental states, so the kind of states formerly incited and their peculiar characteristics would now be multiplied to far more numerous occurrence. The like would occur with the birth of each new sense system. Whatever the peculiar characteristics of our worm's primary sense, therefore, we should expect to discover them preserved to it and multiplied over and over again into the increased mental life of the developing creature.

It is probable, also, that the nerves of the primary system would, to some degree, extend themselves into the new organs of the new senses. And, to the degree that this happened and its nerves were stimulated by the same occurrences as worked upon the new sense, would the developed characteristics of the primary sense be revived and multiplied, both directly and by association, in the new mental experiences, and would thus become woven still more widely into the increasing mental life of the developing creature.

Having identified our primary sense with that of pleasure, it may now be suspected that we have accounted for far too much.

Pleasure does not play any such quantitative part in our mental experiences as the aforesaid multiplications would at first indicate. Another genetic neural process accounting for this matter must now be noted.

Our worm had a sensory nervous system of a particular kind, ramifying throughout its body. Pleasure nerves do not ramify through our body to a like extent. "If the worm's nerves were pleasure nerves," you ask, "what has become of these in us?" As well you might ask what has become of the particular muscles that controlled the worm's various segments, or the segments themselves. They have been lost in morphologic modifications. Each sensory nerve of the worm may, so far as I know, now have its representation in us. But, if so, it could by no means play the same part in mediating our sensory life as it did in that of the worm. In the worm most if not all of these nerves terminated peripherally. If they were pleasure nerves, we must conceive that they there in some vague way mediated pleasure in response to the kinds of influence to which pleasure now responds in us; that is, to most of those kinds of influence which in us cause sight, sound, smell, taste, touch, heat, and cold. But as new sense systems came in, and new sense-organs were developed specially to mediate these separate kinds of influences, the old systems became pushed aside or down, or were left behind in growth, and buried from where their former influences would commonly reach them. In view of consequent disuse, therefore, we might say they would atrophy; only, 'inherited atrophy' is not a happy biological postulate at present. It seems better to conceive that as new organs developed, — organs of all kinds, sensory and muscular, legs, arms, eyes, ears, tongue, — as the organism as a whole grew, and developed to special forms and functions, each new sense system grew along with and into its appropriate organs, while the old sense did not grow, at least did not grow to anything like the extent that the other special sense systems did.

In the last REVIEW we pointed out that 'in us' pleasure sensations seem to be developed in those sensory functions which are most fundamental, and in due proportion to their being

fundamental. In witness of this are the pleasure functions of sex and of nutrition. We may now say, rather, that pleasure was duly *preserved* to the performance of these sensory functions. We intimated, also, the possibility of pleasure nerves yet preserved in all our special sense-organs, and of the kinds of general occurrence that are likely there to reach and to stimulate these submerged fibres. The morphologic bearing of all these matters will now, I think, be sufficiently obvious for our present sketch, without further comment on them.

We now are able to understand why our pleasure sense, if it be our primary sense, does not occupy that quantitative share of our present mental life which, under our postulate, its various multiplications by newly rising sense associations at first seemed to promise. The surface and even the interior of our body has been usurped by a varied set of new sense systems, which now mediate the majority of our efferent experiences. Our primary sense now mediates but few original sensations. The lack of positive demonstration that it mediates any at all, with the fact that so many fundamental functions of the primary sense have been usurped from it, leads us to inquire more closely as to those functions which have been preserved to it, and for what reasons they have been preserved.

Why, under the foregoing wide-spread specialization and substitution, has not our primary sense been eliminated entirely? Our answer is that by the very order and manner of origin and development of our various sense systems the primary sense was peculiarly developed to fitness for centro-neural functions. It has, therefore, been specialized to that function. We have already noted that each new sense must be joined to old motor paths, in order to become of service. The complex nature of our higher nervous centres, which is required to bring about the proper adjustments of the infinite variety of our present sensory experiences to appropriate co-ordination with a nearly equal variety of possible muscular combinations, is too common a subject of modern knowledge to need more than mention here. This vast central co-ordination of sensory paths to motor paths has itself become a special function of our neural organism of

major importance. Both by reason of its early start in advance of our other senses in performing this particular function, and the special fitness for mediating all kinds of neural energies which its first selection as a primary sense seems to indicate, it seems not improbable that the primary sense, under the general processes of neural specialization, became devoted to central functions, similarly as the other senses became devoted to those functions to which their fitness and date of origin destined them.

Though the peripheral fibres of our primary sense system have, therefore, been largely submerged, and their functions lost, its central parts, with their functions and their particular mental characteristics, have yet been preserved to us essentially unaltered. We cannot fail to observe that this specialization of our primary sense to central functions would make it characteristically 'associative' in comparison with the peripheral senses. For, except in so far as we grant absolute spontaneity to the cortex, our primary sense would now be chiefly dependent for stimulation upon its function of associating or connecting various in-coming impulses with proper out-going impulses. This corresponds with the 'associative' nature of our æsthetic pleasures, which we discovered in our analysis of those matters, and to that degree favors our postulate that pleasure is our primary sense.

But to substantiate our theory we must now inquire how these morphologic developments affect the present individual. Our postulate is likely to incur prejudice, in that it declares that we experience particular pleasure, without previous correspondent stimulation of any peripheral pleasure nerves. We are indebted to Professor William James for taking ground emphatically against the notion that there is nothing in the mind not let in by our sensations. This author declares that "the mind is filled with necessary and eternal relations" which "it in no way gets through experience." Yet each of these relations he holds to be a definite feeling based, as are all other feelings, upon some definite cortical action. Thus, his "fringe" feelings, his feelings of "if," "and," "but," "like," "equal," "different," "more,"

and so on, — all of these Professor James bases on cortical peculiarities which have come into the line of our inheritance by the "back door" of spontaneous biologic development. Among other of these *a priori* mental occurrences Professor James includes our æsthetic and moral judgments.

But in ourselves, more precisely what are these strange æsthetic feelings, based on natural genesis, but not let in by correspondent sensations of our own experience? And how do they work? First, I answer, they are not so strange after all; and, secondly, they work on a footing with all other conscious processes. The paths of our primary or pleasure sense are not the only associative or connective paths which our cortex has inherited. At birth the cortex is braided through and through with associative paths, probably of every kind of sense. Unquestionably the arrangement inherited by every sense system has somewhat to do with the manner in which it shall be stimulated. Thus, a stimulation of the retina must, by necessity, first go to the optic centre rather than to the auditory centre. There must be a vast number of optic cells in the cortex which are not direct terminals of optic fibres. There is little doubt that the paths to these are as fixed at birth as is the route up from the retina. It is such cells and paths with which those inherited from our primary sense stand on essentially common footing.

The more we look at the matter, the more it seems probable that the number and the arrangement of all the sensory paths and cells in the body are likely to be pretty much the same in the child as in the adult, and not very different among most men. Rather, it is the manner in which these paths work and are used that determines the 'make-up' of our mental lives. Most men inherit the same number and general arrangement of legs, arms, and features, yet there is abundance of variety in individuals. I am inclined to believe that most of the neural paths, even in the cortex, and of whatever kind of sense they be, are, as paths, fixed forever congenitally; that the whole is the result of an untold period of selected adaptation of inner possibilities to outer possibilities; that we must, therefore, look

to certain characteristics inherited in every human cortex for numerous mental traits exhibited in common by all men; and that, of certain other differences more peculiar to individual lives, we should attribute some, perhaps, to congenital temperaments or 'working traits,' but more to the endless variety of education and of human experience.

As there is nothing strange in the arrangement of our æsthetic paths, so there is nothing fundamentally peculiar in their mode of work; in the manner in which they respond to whatever stimulations their definite arrangements bring to them. We have said it is the fundamental function of every sensory state to tend to some act. Suppose a child to open his eyes for the first time, that they fall on a red blanket, and that they then close. We are not to think that his retinal stimulations would run up to the cortex and stop there at the first cells reached. They would push on to some sort of activity. The resulting activity might seem to us a merely inco-ordinate kicking of limbs and working of muscles. Yet, physiologically, the movements would be as definite as playing the piano. They would be the movements most naturally beneficial to the life of man as a whole, in response to that kind of experience in the abstract. If the glance at the blanket was brief, the resulting movement might be beyond our scrutiny. If the red blanket attracted attention for sufficient time, the kicking would, very likely, be considerable.

Now what does the child feel as the sensory side of such a first occurrence? Those who have watched babies know they appear to feel something more than the mere optic sensations. Professor James, with his peculiar notion as to emotions, would say the child feels happy because he kicks. But, according to this author's own views with reference to volition and innervation-sense, he ought rather to say, as we shall, The child feels the natural ideo-motor pleasure-state which makes him kick. It is our postulate that, frequently on such early occasions, such optic stimulations (and others of various kinds similarly) discharge to their appropriate acts through the inherited paths of our primary pleasure sense, and that what the child feels, in

addition to the peripheral sensation, is the proper pleasure feeling or emotion corresponding to such a discharge. Not that this need be all 'additionally' that the child might feel; for other *a priori* or 'fringe' feelings would also be likely to be awakened at an early date. Nor would the child always 'kick and coo' at sight of a red blanket. At another time, the same optic stimulation might come to him compounded with other stimulations, say with a pang of stomach-ache. In which case the modified discharge would be quite different; the child now might cry and kick. And the child might thus have developed, in pursuance of the laws of use and habit, an æsthetic 'prejudice' against the color red, lasting an indefinite time thereafter, in place of a 'liking' for the color, as in the first instance.

So much for first occurrences; now for subsequent ones partially involving paths used in previous occasions. It is a primary neural law that the exercise of any inherited tendency modifies that tendency. This paper may presuppose a knowledge of psychologic association, according to the laws of which our mental events are persistently 'objectified' and grouped into the percepts and concepts which, as we say, correspond to outer events. Yet, for our subject, we must emphasize the truth that it is not the association of outer things, but the different associations of inner neural tendencies which is the immediate source of modification and of persistent grouping in these processes. No matter how the paths got into the brain, and no matter what sort of stimulations, associative or peripheral, the currents be which traverse them, the same laws of use and habit will govern all alike.

The manner in which our peripheral senses are associatively 'worked up' under the dual influences of outer events and inherited conditions is commonly thought to be pretty plain. Why then should it now be less plain how, under circumstances fundamentally of the same nature, our æsthetic feelings come to be worked up in the manner in which we know them? All our senses work under these dual conditions of inherited function and of the outer influences which these functions subject them to. All our senses are made up differently

in accordance with these dual conditions. Thus, our joint or articulate feelings are made up differently from our auditory feelings, and our temperature feelings from those of touch. I could not in this short paper trace up each phase of our æsthetic feelings, and show precisely both to what outer and to what inner conditions they are due. I can only indicate general conditions. To this end we may first note that in so far as the conditions, outer and inner, of our æsthetic feelings correspond to those of any other sense, or class of senses, in that proportion will the make-up correspond to the make-up of the latter.

If, then, our above account of their origins be correct, pleasure, and also pain, in us ought to betray both certain characteristics resembling the make-up of our motor feelings and other characteristics more like those of our objective senses, — these which give us our ideas of outer things and objects. This ought to be so for pleasure, because pleasure has inherited characteristics of a motor make-up, and is now by its central functions intimately associated with the outer senses. And this ought to be so for pain, because pain, on account of the nearly universal distribution of its nerves in every muscle and organ of the body, is both eminently motor and eminently associative in its present functions.

How, from the associative functions and characteristics of pleasure and pain, we get our more objective and 'outer' make-up of æsthetic feelings, I think has now been as clearly indicated as in this short space could be expected. From these, made up with our other senses, we have the varied prettiness of every stretch of landscape; the delights or discords of its complicated colors; the grace or ugliness of its many outlines and objects; the catching melody or unpleasant grating of its sounds; the agreeable fragrance of its winds or flowers; the unpleasant nastiness of its muddy paths and ditches. How these mosaics of æsthetic feelings correspond psychologically with the similar mosaics of other feelings in combination with which they are woven; how they vary in men of different temperaments, and how they change within ourselves with varying moods and

from occasion to occasion; what is their present process of individual make-up, and what their biological origin in general, — all these things, I hope, will now appear somewhat more comprehensible to the student of modern science.

For our more massive æsthetic groupings, — those lying at the base of our emotions and deeper passions, — a few more words are needed. From the first we may surmise that here we have more to do with the inherited motor characteristics of our æsthetic senses. By reference to our instincts in general, we may appreciate this more clearly. Spalding has thrown light on their complicated nature. Certain complex outer influences must be brought into proper accord with inner conditions equally complex, or the instinct is forever inherited in vain. The chick may flap his wings at certain periods, and see men or hawks at others; but not unless the chick see the man at a particular post-natal period, and his wings be free to flap at that particular conjunction of events, will it execute that definite and complex set of movements which betrays his inherited fear of man.

The instinct seems to be a complex motor-idea inherited as a whole. It never goes off, unless it be fired as a whole. When it is fired, we have reason to believe that it is felt as a whole. For myself, this, in connection with the theories of this paper, seems to bring the nature of our inherited emotions more clearly home to me. In life's varied experiences, more or less of our æsthetic paths may be knit up into the more complicated associations which we have described in connection with the 'objective' senses. But on the occurrence of proper conditions of stimulation, these should not hinder us from experiencing the purer instinctive 'wholes' which we have inherited, or the as pure and even more massive wholes which may be occasioned by more diffusive stimulation of our inherited primary tracts in general. Such survived efforts and struggles, as it were, transacted by our unknown ancestors in terms of their primary motor sense, are precisely what I seem to feel when I experience these deeper passions and emotions, whether pleasant or unpleasant.

A final point remains to be considered. Though I believe

the last chapter in Professor James's text-book is one of the most important contributions to the future of psychology ever written, yet I think grave misuse is made there of the term *a priori* as applied to traits of mind inherited from a like source to those treated of in this paper. Whether the origin of these traits is 'spontaneous' or 'acquired,' the result is the same; and experience plays the same part in that result in either case. It is only played in a different way according to Weismann than according to Lamarck. By rejecting the unfit and perpetuating only 'her own,' Experience as truly moulds our organic and mental functions as if for each individual she formed them wholly and anew. No traits of mind, then, are 'independent of experience,' except in the sense that all traits are so; except in so far as the first cause of all things is unknown. This is important relative to the way in which we should look at the inherited characteristics of our primary or pleasure sense. Looked at as traits of our ancestral worm, we are sceptical regarding the whole postulate. Looked upon as traits of our present neural system, of similar origin and like function with all the rest, and as mediatory and expressive of our present environment as any traits of our other senses, the postulate at once loses its strangeness. Human nature is said to be much alike in all men. That we have much in common; that we are moulded much alike; that, as 'moulds,' we are much alike; that nature and experience between them have worked through unknown periods in fashioning the moulds to be filled so differently in our individual lives,—all this ought no longer to be a difficult hypothesis of mental science.

Acknowledging the many blunders likely to be made in so broad a departure from traditions, I yet must declare this whole matter of the biological origin of mind to be one of the most promising sources of future psychological investigation. To me, also, it is a main avenue to the deeper secrets of the universe and of man's futurity.

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(*Concluded.*)

DISCUSSIONS.

REALITY AND "IDEALISM."

THE readers of Mr. Ritchie's papers will have learnt by this time that they may expect to be entertained with a clear account of his views, neatly phrased and intelligibly presented, and not disdainful of an occasional touch of humor. And in these respects they will have not been disappointed by his brilliant disquisition on —What is reality? — in the May number of the PHILOSOPHICAL REVIEW. But if they sought fresh light on one of the most puzzling and fundamental of philosophic problems, it is to be feared that they were not equally well satisfied. Mr. Ritchie's paper is polemical rather than investigatory, and he seems more concerned to make dialectical points against his adversaries than to probe his subject to the bottom. And as his adversaries' views are very various, and often have little in common but their disagreement with Mr. Ritchie's, and as, moreover, they are not stated or definitely referred to, the total effect is somewhat confusing. Nor is the confusion improved by the way in which Mr. Ritchie discusses some two or three different questions about reality in the same breath. The justification in his mind for this procedure evidently lies in the fact that they all offer a basis for objections to his own views, which he would, perhaps, not object to have called Neo-Hegelian. But this does not constitute any intrinsic kinship between the views he criticises, and his discussion would have gained largely, if he had added to his classification of the various *sorts* of reality a classification of the various *questions that may be raised about it.* It would be too much, perhaps, to expect Mr. Ritchie to excel the rest of his school as much in substance as he does in style, but it seems evident that he has, as little as they, kept clear of the Hegelian confusion of epistemology and metaphysics, to which Professor Seth has of late drawn so much attention.

There are at least *four* questions, which Mr. Ritchie's paper trenches upon. They are —

I. How do we know that there is any reality at all, or how do we come to assert an external world?

II. What is reality at the beginning of inquiry, *i.e.* what is the primary datum to be explained?

III. How is it to be explained — by what criteria do we inquire into reality?

IV. What does reality turn out to be — after inquiry?

Of these, I and III seem to be epistemological, while II is psychological, and IV plainly metaphysical. Mr. Ritchie does not seem to distinguish II from III, attributes his answer to III without more ado to IV, and refers to I only at the end, by way of meeting a logical objection to his view of IV. This confusion is shown also in his method of proof. His real purpose is to establish certain metaphysical views as to the nature of ultimate reality, but he treats his subject for the most part, as if it were an epistemological inquiry into the criteria of reality, and when, after establishing his metaphysical view of reality to his satisfaction, he is confronted (p. 281) by the logical impossibility of identifying thought with its object, he suddenly throws us back upon the primary subjectivity of all experience. And all this without a hint of a *μεταβάσις εἰς ἄλλο γένος*. The connection is no doubt clear enough to Mr. Ritchie's mind, if, as must be supposed, he follows T. H. Green in his fearful and wonderful leap from the fact that all phenomena appear to some individual self to the conclusion that they are, *therefore*, appearances to a universal self; but he might at least have warned us that his opponents have repeatedly declared their inability to compass such saltatory exercises, and regard the two halves of the argument as belonging respectively to epistemology and to metaphysics, and the transition from the one to the other as a paralogism.

If, however, we refuse to take this Greenian *salto mortale*, it is evident that the first question must be settled before any of the rest can arise at all. For, as Professor Seth has so well pointed out, realism and idealism mean very different things according as they are taken in an epistemological or a metaphysical sense, and "it is possible to be epistemologically a strenuous realist and an idealist in the metaphysical sense of the term" (PHILOSOPHICAL REVIEW, p. 142). Nay, "it is only in virtue of epistemological realism that we can avoid scepticism, and so much as begin our journey towards metaphysical idealism." If, then, epistemological idealism is solipsism and "twin brother to scepticism," it must be surmounted before the nature of reality can be discussed. If it is not surmounted — *cadit quaestio* — it becomes futile to discuss whether the real is one or many, whether its criterion is consistency or what, if there is no objectivity at all. Mr. Ritchie has, of course, a perfect right to call a halt here, and to refuse to discuss anything further until his opponents have successfully emerged from the clutches of subjective realism. But once they have been permitted to escape, once he has conceded the objectivity of the phenomena which form the content of consciousness, he is *not* entitled to revert to the prior question. In other words, the discussion of the question — What is reality? — presupposes a settlement of the question — Is there reality? — in the affirmative. It is only when reality has been

admitted to exist that we can begin to distinguish the real from the unreal, and to enumerate the different sorts and criteria of each.

It is necessary in the next place to put the primitive *datum explicandum* in the proper light. The primary psychological fact is that everything that is is real, and that the burden of proof lies on those who deny that anything is real. Nor does Mr. Ritchie dispute this, though he minimizes its importance, and apparently fails to see that reality in this sense rests on a totally different footing from all others. For it is the primary fact which all the rest are more or less complete theories to explain, and to which they must be referred in order to test their validity. If they prove capable of explaining what they set out to explain, we may reach a loftier view of reality, which will transfigure our primary datum for us, but which even so cannot be considered in abstraction from its basis; if they do not, the other 'senses of reality' are worthless. For their work is hypothetical and derivative, and if the conditions under which we ascribed reality to these interpreters of reality are not fulfilled, their *raison d'être* has vanished. But reality survives — even though its inscrutable flux of phenomena should laugh to scorn the attempts at comprehending it which it provokes.

But this unique position of primary reality Mr. Ritchie quite fails to appreciate.[1] Hence it is on the basis of an insufficient recognition of the psychological data that he proposes to consider what reality is. This question is plainly an ontological one, but Mr. Ritchie treats it as if it were epistemological, and = 'How do we know a phenomenon to be (ultimately) real?' *I.e.* he substitutes for the ontological inquiry into the *ratio essendi* of reality an epistemological inquiry into its *ratio cognoscendi* or the *criterion* of reality, and then unhesitatingly attributes to his results a metaphysical validity. Yet he seems quite unaware that

[1] He does not even succeed in proving the unreality of dreams, by saying that they are not self-coherent nor follow in an intelligible sequence on the events of previous dreams. For their 'incoherence' is not, as a rule, intrinsic, but is an *ex post facto* judgment passed on them in our waking life. And as for the intelligible sequence of successive dreams, we should require an intelligible sequence *in successive lives* to make the parallel complete. Unless, then, Mr. Ritchie has a transcendent knowledge of another life, whereby he judges our waking life to be real, because of its coherence and intelligibleness *from the standpoint of the former*, his comparison fails. It is true that we sometimes suspect our dreams while still dreaming (though as all dreams are 'near waking,' we cannot be said to be 'nearer waking' then). But does not our waking life lie under the same suspicion on the same grounds? If it is permissible for once to appeal from the "plain man" to the man of genius, is it not "a mad, mad world, my masters"? Have not seers, prophets, and philosophers in all ages testified that our earthly life was but a dream? And if to these divinely-inspired 'dreamers' we owe all the religions that have swayed the lives of men, must not dreams and hallucinations be accounted most real — in Mr. Ritchie's "ethical" sense?

such a method, even if successful, would be defective and inadequate. Even at its best, even if it could be shown that reality could be *known* only as a coherent system of thought-relations, it would not necessarily follow that reality *was nothing more*, and he would not necessarily have proved anything but the impotence of his thought to grasp reality, by reducing his symbolical expressions for reality to absurdity and contradiction. Thus his proofs cannot prove what he desires, and his refutations only recoil upon his method.

But it may be shown also that his criterion is not valid. He suggests (p. 267) a triple test of rationality, a triple basis for the metaphysical assertion that reality is thought. (1) "The agreement between the inferences drawn from the experience of our different senses; (2) the agreement between the judgments of different persons; (3) the harmony of present experience with the results of their and our previous experience, constitute between them the test of reality." It is to be feared that "between them" they fall very far short of giving a reliable test of reality.

(1) The first is open to objection as a matter of fact. It is doubtful how far the testimonies of the various senses really corroborate one another, and how far they are not rather incommensurable and referred to the same 'thing' for reasons of practical convenience. As Dr. Schwarz (*Das Wahrnehmungs problem*) has asked, are after-images and overtones, which *regularly* accompany sights and sounds, to be esteemed unreal because we generally find it convenient to neglect them? And yet it is hard to say to what data of touch they correspond. Again, what can this criterion make of cases of hyperæsthesia of one sense, or of an occasional activity of some special sensitiveness? Are they to be rejected because they necessarily lie beyond confirmation by the other senses? As far as this criterion goes, there is nothing to prevent a real thing from contravening it, and an 'unreal' thing from conforming to it. Is "Pepper's ghost" unreal because it cannot be touched? Or is a hallucination affecting several senses to be esteemed real?

(2) The second criterion is no better than the first. So Mr. Ritchie 'smells a rat,' in the case of his hypothetical mouse (p. 267), and limits its value by stipulating that B, C, D, and E (who do not see it) should have good eyesight. But how is it to be established that A (who does see it) does not considerably surpass them in the delicacy of his senses? In this difficulty, Mr. Ritchie proposes to call in expert opinion in the shape of "a hungry cat." (What scorn he would pour on such an appeal to the lower animals if it were a question of establishing the objectivity of an apparition!) Very good. But how if the cat side with the minority? It is to be hoped that Mr. Ritchie will prefer science to democracy, and the authoritative judgment of Athanasius and the cat

against the rest of the world! If he does not, he might work out an amusing theory making the *Referendum* the ultimate test of reality. That, at least, would be a definite method of utilizing the experience of others, such as is at present lacking. We act quite inconsistently in sometimes submitting to the superior delicacy of the expert's senses, and sometimes rejecting it. A room full of unmusical or inartistic people would hardly dispute about tones or colors with a single musician or painter, but an assembly of non-sensitives would probably deny that Macbeth saw a ghost (though who more qualified than Macbeth to see the ghost of Banquo?). The color-blind, perhaps because they are in a minority, do not dispute the objectivity of colors they cannot see, but upon what logical principle should we be less forbearing towards those who claim to see the ultra-violet and infra-red rays of the spectrum, or the luminosity of a magnetic field? — In short, just as the excluding value of non-conformity was impaired in the first case by the possibility of genuine hyperæsthesia in the individual, so in the second it is impaired by the possibility of collective hyperæsthesia. And just as in the first case conformity did not exclude error, owing to the possibility of complex hallucination, so it fails in the second, owing to the possibility of collective hallucination.

(3) The third criterion at first seems more valuable — until we recollect that every new fact and every new experience is in some degree out of harmony with and contradictory of our previous experience. Would it not be strange, then, to allow our own inexperience, and the stupidity of our ancestors to exercise an absolute censorship over the growth of knowledge? Besides, it so happens that in most cases when "universal experience" is appealed to, its voice is self-contradictory. (What right have we, *e.g.* to reject countless traditions in order to prove that miracles are "contrary to experience"?)

But perhaps Mr. Ritchie does not contend that any one of his criteria is singly sufficient as a test of reality and proposes to employ them collectively. But if so, should he not show some probability that they will always, or even normally, tend in the same direction? And even if they did, that would establish, not the collective theoretic certainty of criteria, each of which was individually fallible, much less a necessary basis for metaphysical inferences, but only a sort of practical probability, which it might be convenient to act upon. Thus the boasted rationality of the real reduces itself to this: upon Mr. Ritchie's own showing rationality is not an ultimate test, but resolvable into the three criteria he mentions, and in the end their value turns out to be practical!

Yet it may be that humbling the pretensions of this pseudo-rationality does good service in drawing attention to the commonest and most

influential of the practical tests of reality, which may be said to have underlain and guided the development of all the rest. It lies in the fact emphasized by Professor James in his excellent chapter on the perception of reality (Psych. II, 295) that "that is adjudged real which has intimate relation to our emotional and active life," *i.e.* practical value. It is this criterion which has constituted the objective world of ordinary men, by excluding from it the world of dreams, hallucinations, and the transient though normal 'illusions of the senses.' It is this which accounts for the superior reality so often ascribed to feelings, especially to pleasure and pain, which Mr. Ritchie mentions (pp. 268–9). It is this which absorbs into it Mr. Ritchie's fifth or "ethical" sense of reality. It is this, lastly, which has moulded the whole development of the intellect, and so pervades all Mr. Ritchie's criteria and reduces them to dependence upon it. Hence if we are to speak of any 'main (derivative) sense of reality' at all, it must certainly be conceded to Professor James that "whatever things have intimate and continuous connection with my life, are things of whose reality I cannot doubt."

And though there can be no doubt of the practical importance of this criterion, there may be much about its speculative value. The history of the practical struggle which has evolved us and our minds seems to offer but slender guarantees that our faculties should have been fitted for, and our energies directed towards, those aspects of reality which are of the greatest theoretic importance,[1] and hence arguments from practical or moral necessity, universal desires, and the like, do not perhaps yield the safest approach to the ultimate reality of things.

And not only must it be said that Mr. Ritchie's tests are not, properly speaking, rational at all, but it must be pointed out that he actually shrinks from mentioning in this place the test of rationality in its simplest and severest shape, *viz.* that of conformity to the necessary laws of our thought. The omission is surprising, and one would fain ascribe it to the perception that it would have been too palpable a begging of the issue to have made conformity with the laws of thought the *test* of reality in an argument designed to *show* that reality ultimately lay in the determinations of our thought. Or can it be due to the fact that the chief characteristic of reality is its Becoming, and that Becoming and its defiance of the law of Contradiction is what our thought has never been able to grasp? Yet the criterion is not without value. We are reluctant to admit facts and explanations which seem to contravene it, such as, *e.g.* the four-dimensionality of Space and the illusoriness of Time, and would only accept them as inferences, *e.g.* from the untying of Zöllner's knots and the alleged occurrence of premonitions, in the very last resort.

[1] Else should we not have developed *e.g.* an electric sense?

What then is the result of a critical survey of the various criteria of reality? Is it not that though all may be of service, none can be entirely relied upon as the *ratio cognoscendi* of reality? There is no royal road to omniscience any more than to omnipotence, even though we do not hold with Mr. Ritchie that the two coincide. The cognition of reality is a slow and arduous process, and of its possession we cannot be sure until we possess it *whole*. The only certain and ultimate test of reality is the absence of internal friction, is its undisputed occupation of the field of consciousness, in a word, its self-evidence. It is because reality does *not* display this character that thought has to be called in to interpret it. If it did, there would be no distinction between real and unreal, between what is 'real-ly' presented and 'merely imagined,' between the self and the world, and there would be no such thing as thought. As Professor James so well points out (Psychology, II, 287) a hallucinatory candle occupying the whole field of consciousness would be equivalent to a real one. But as a matter of fact the contents of consciousness present no such permanence and self-evidence; their initial state is a fleeting succession of conflicting presentations which supplant and contradict one another. Some of these are frequently followed by painful, others by pleasurable feelings, and the penalty of idle acquiescence in the flux of phenomena is rapid death. So a dire necessity is laid upon the subject to distinguish himself from the world, and to set about thinking how phenomena may be controlled. He naturally begins by ascribing to the phenomena which are followed by pains or other practically important consequences a reality not shared by the rest. This first interpretation of the chaos of presentations is probably the first for which we can have direct testimony, and represents the view of reality taken by savages and small children. It is merely an extension of this view when the "plain man," in the condition of "natural realism" distinguishes hallucinations, fancies, and dreams from *true* reality.

To effect this he uses whatever tests seem most practically useful — among others those of "coherence" and "consistency." Thus, the plain man's view is simply the first stage in the attempt to reach a harmony of the real. The view of the physicists represents a second and subsequent stage. And Mr. Ritchie's philosophy of the ultimate nature of reality is possibly a third. Each leads on to the other, because each is successively recognized *not* to be a coherent and consistent account of the world and *not* to eliminate the irrational and unsatisfactory element in experience. The plain man's 'things,' the physicist's 'atoms,' and Mr. Ritchie's 'Absolute,' are all of them more or less persevering and well-considered schemes to interpret the primary reality of phenomena, and in this sense Mr. Ritchie is entitled to call the "sunrise" a theory (p. 274). But the chaos of presentations, out of which we have

(by criteria ultimately *practical*) *isolated* the phenomenon we call sunrise, is *not* a theory, but the fact which has called all theories into being.

In addition to generalizing hypothetical objects to explain phenomena, this process of the interpretation of reality by our thought also bestows a derivative reality on the abstractions themselves with which thought works. If they are the instruments wherewith thought accomplishes such effects upon reality, they must surely be themselves real. Hence philosophers have long asserted the reality of Ideas, and we commonly hold the triangle and the space of mathematical abstraction to be *the real* triangle and *the real* space. (Mr. Ritchie's fourth sense.) Similarly the goals to which the methods of our thought tend — its intrinsic ideals — acquire a hypothetical reality of a lofty order. For it is evident that if the real nature of phenomena is to be discovered by the way of thought, the supreme ideals of that thought must be, *or be realized by*, the ultimate reality. But it would not follow that those ideals would render reality mere thought. For they might point either at a reality which should transcend thought, or at one of which thought should be but a single activity — even as it is now the activity of real beings.

But it is needless to discuss what would happen to thought if reality had been rendered harmonious, in view of the fact that no philosophy has succeeded in doing this. The whole attempt is dependent for its validity on its success, and its success is, to put it mildly, imperfect. The scientific view of atoms goes behind the popular view of "things," because it holds that the latter do not construct a tenable view of phenomena. Mr. Ritchie would treat the atoms similarly. But would he seriously contend that he can already give an entirely consistent, coherent, and intelligible view of the whole world, giving a reason why everything is exactly what it is and not otherwise? Of course Mr. Ritchie does not lay claim to omniscience. But if he cannot, in what respect is he better than those publicans and sinners, the "plain men" and the realists? If he cannot, why make such a fuss about coherency and consistency as the test of reality? By his own admission they represent a postulate which is never actually realized, and for aught we know never can be. If he cannot, lastly, what boots it to explain that though reality is not thought for us, it is for God (p. 272)? This free and easy appeal to the Deity, in the midst of a discussion of *human* knowledge, in order to silence an opponent and to fill up any gap in the argument, ought surely to be as severely reprobated as the medieval practice of ascribing any ill-understood fact or bit of knowledge to the agency of the Devil. The question is not whether to a divine mind, supposing its existence to be tenable in Mr. Ritchie's sense, reality is thought, but whether that assertion is a valid defence against the objection that Mr. Ritchie has given away his case when he has admitted that reality is not thought to

human minds. Until, then, Mr. Ritchie can bring rather more convincing proof of his approaching apotheosis and omniscience, it must be contended that he has neither made out his assertion that rationality is the test of reality, nor its connection with the metaphysical dogma that the real is ultimately the thought of a "divine mind."

This question as to the ultimate nature of reality, forming the ultimate problem of ontology, brings us to the fourth and last question which may be raised about reality. And enough has been said concerning the imperfections of our methods of interpreting reality, to render it clear that we are perhaps hardly yet entitled to give any very confident answer to this question. From a purely scientific standpoint, I can see no reason for attempting to prejudge the answer. It is pre-eminently a question to be met with a *solvitur ambulando*. From other points of view no doubt several different answers may be given, and Mr. Ritchie's pantheistic doctrine doubtless remains tenable, even though its epistemological basis be insecure. But at least as much may be claimed for the doctrine which Mr. Ritchie is most anxious to refute, the doctrine which denies most emphatically that existence is ever reducible to essence, and holds that the individual is the real.

At all events it is, I think, possible to show that this doctrine is neither uncritical nor unable to maintain itself against Mr. Ritchie's objections. Mr. Ritchie regards it as the uncritical product of the popular *Vorsbeltung*, because it makes its appearance at a very early stage in the interpretation of reality. But this should rather speak in its favor, if it is able to reassert its validity after the fullest critical examination of the facts and of objections such as Mr. Ritchie's.

Those objections arise in the first place out of his failure to appreciate the development in our conceptions of individuality and reality which has corresponded to the evolution of the objects which they symbolize, and in the second, out of his misunderstanding the respective positions which his opponents' logic assigns to thought-symbols and that which they symbolize. To say that the individual is the real and that the real is individual, is to make a proposition concerning a reality beyond it. It draws our attention to a fact which its terms cannot fully express. It is an adjectival description of reality in terms of thought-symbols. But it is not substantival. It is no definition of reality, but a reference to it, which expresses a characteristic feature intelligibly to real beings who can *feel* the extra-logical nature of reality. Hence it does not even necessarily state the *essence* of reality; for the theoretic validity (not the practical convenience) of the doctrine of essence is called in question, and the fortunes of the expression certainly do not affect the *existence* of reality. But Mr. Ritchie treats it as if the sum and substance of all reality were supposed to be contained in it, and dissects it mercilessly in order to

show that there is nothing in it. But in criticising the terms of the proposition he thinks he annihilates also the reality beyond it. He is mistaken; for he tramples only on the shadow of his foe. The individual and the real (*i.e.* the thing symbolized by those symbols of our speech) are *not* a couple of categories, nor even fully defined concepts. They are just sign-posts, which to a purely thinking mind might convey no meaning, or the contradictory meanings Mr. Ritchie criticises, but which are meant for beings who are real as well as rational. Mr. Ritchie wilfully strips himself of one of his chief means of understanding the world when he abstracts from his own reality, and is then puzzled to find that he must be either nothing or an unknowable thing-in-itself, if he be not a bundle of universal thought-relations. So he comes to the absurd conclusion that he is made up of the products of one of his own activities! Does not this remind one of the hero of Andersen's fairy tale, who became subservient to his shadow? And so it is not surprising that to one who holds that the individual is the real, his polemic (pp. 276–80) should appear a *σκιαμαχία*, which cannot grasp the logical position of reality, and results only in a series of *hystera protera*.

For example, the individual is *not* 'everything which is called one'— things are called one because we attribute to them this extra-logical character of individuality. Nor is the individual what can be expressed by a single term — because the latter is only the nearest logic can get to expressing individuality. The individual is *not* a spiritual or thinking substance — because the whole category of substance rests upon and is abstracted from the individual, is an attempt thought makes to symbolize a substantivity, which its own adjectivity never properly expresses. The individual is more than a meeting-point of universals, because universals are not individuals, nor able to form one, however many of them meet together. But they never do meet in numbers sufficient for a quorum: the attempt to reduce the individuals to universals generates an infinite process, which is never equivalent to the finite individual.

It is not, then, any logical difficulty which compels us to modify the original sense of the assertion that individuality is an ultimate and definitely determined characteristic of reality, but the general flux of reality itself. The individual also is in process, and so individuality becomes a characteristic of which reality may be seen to have less or more. The individuality of a drop of water is very evanescent; the individuality of a schoolboy, or even of a mule, is often found to be a very stubborn fact. Once we have degrees, we can form a standard of individuality; and the scale may be prolonged inferentially beyond what is actually given. Individuality thereby becomes a hypothesis and an ideal, as well as a characteristic of reality. The atom of physics is such a hypothetical prolongation of the individual in one direction. *Monads*

and the like, are prolongations in another, and, in the writer's opinion, a far more promising, direction. So we can come to say that an individual is lacking in individuality, *i.e.* shows this universal characteristic of reality too indistinctly, *seems* to lend himself too easily to 'explanation' by universals, *seems* to borrow too much from others, and the like.

But this in nowise trenches upon the value of individuality. It simply postulates that we must learn to think of the individuality of the real as we have learned to think of its reality, not as a completed *being*, but as a *becoming*, i.e. *as being a process*. That which we designate by the term individuality is a varying and growing quantity, never wholly absent, but not always fully developed. At the one end of the process are the atoms — of which we can hardly discern the individuality. At the other end are — let us say the angels — individuals so perfectly individualized that, as mediæval doctors taught, each would form a species by himself.

And with all deference to the *magni nominis umbra*, wherewith the Absolute has overshadowed the minds of philosophers, it seems to me that it is to some such conclusion as this that the course of science tends, rather than to a single merely rational 'universal law,' from which all *existences* might be necessarily deduced by purely logical processes. Of the difficulties which the latter alternative involves Mr. Ritchie gives us a sample on page 277, which is valuable as containing a recognition by one of his school, belated and inadequate though that recognition be, of the gravity of questions that should have been considered before ever it was enunciated that reality was Thought. This is not the place to discuss what meaning, if any, can be attached to the dictum that "Thought *realizes* (does not this covertly reassert the distinction it pretends to explain away?) itself in its Other in order to return into itself," but it may be remarked that Mr. Ritchie's "dilemma," which drives him to such a solution, presents no difficulties to those who hold that the real is individual. For if the universe be constituted by the interactions of real individuals, some or all of whom display as *one* of their activities what we call 'thought,' there is no such 'irrational' and 'alien' Other as troubles Mr. Ritchie; for what 'confronts thought' is merely the *whole* of which it is the *part* and the practical interpreter. Nor does thought itself ever claim more for itself than this, whether it be in its reference of every proposition to a reality beyond it, or in its recognition of the necessity that an activity presupposes a real being as its substrate, or in its ultimate foundation of all proof on the self-evident.

Thus it is only an infirmity of our reason, causing us to hypostasize abstractions, which leads us to speak of 'universal laws of nature,' as if they were more than shorthand expressions for the habitual interactions of realities. But as the subtlety of our insight draws nearer to the

subtlety of nature, the crudeness of our 'universal laws' begins to appear. We grow better able to appreciate the real individuality of things, and so substitute *specific* 'laws' for *general*. We no longer ascribe John Doe's death to the universal mortality of humanity, but get the doctor to tell us precisely why John Doe, and no other, died. As we know him better, we do not account for a friend's conduct 'because he is a man,' but by a 'because he is *this* man.' In all our explanations we seek to get down to the particular, to do justice to the individual peculiarity of things, to enlarge the part assigned to personal idiosyncrasy. In the case of the lower orders of individuality such appreciation of the peculiar nature of each thing may still be an impracticable and indefinitely distant ideal, but with regard to higher orders the principle is well established. We could hardly say with the poet that "the proper study for mankind is man," if there were not, even in the meanest, an inexhaustible store of idiosyncratic reactions, — an individuality, in short, which becomes more and more conspicuous as we pass from the lower to the higher, and looks less and less like a combination of abstract universals! Hence, if we are to hazard any assertions concerning 'Omniscience,' is it not clear that it could have no use for universals, and so far from regarding the individual as compounded of them, would apprehend the idiosyncrasy of each thing in its action, without the clumsy mediation of 'universal laws'?

In conclusion, then, let us contend against Mr. Ritchie that other views than his own of ultimate reality are tenable, that they answer the epistemological and metaphysical difficulties at least as well as his, and are at least as deserving of the name of idealism (if Berkeley retains any claim to the doctrine he discovered!), and that they are far concreter and in closer interaction with the sciences than a metempiric misconception like the Absolute. Nor need we blush to own that a view like ours would *not* prove the popular *Vorstellung* of "persons" *wholly* false (even though it would tend to regard 'things' as being only 'persons' of a lower development of individuality), and so might prove more attractive to the "plain man." For it is possible to be "critical," *without* disregarding either humanity or reality.

F. C. S. SCHILLER.

REVIEWS OF BOOKS.

Logik. Von BENNO ERDMANN. Erster Band: Logische Elementarlehre. Halle. 1892. — pp. xv, 632.

This first volume of Professor Erdmann's Logic is extremely rich in content, and, like several other recent logical treatises, such as Sigwart's and Wundt's, it defies a summary judgment, and must in the main be tested by long usage. The noted student of Kant's philosophical development does here no injustice to his well-earned reputation for minuteness and carefulness of scholarship. Where close examination is required, Erdmann does not spare pains, nor does he fear to weary his readers. On the other hand, breadth of view is secured by two devices, not unfamiliar in themselves, but here carried out with great industry. The one device is that of the historical comparison of logical doctrines, the other that of great variety in the choice of concrete examples of logical forms, principles, and processes. The historical comparisons are, to be sure, very briefly set forth, in summary paragraphs, usually placed at the conclusion of each new positive statement of Erdmann's own views. The examples, on the other hand, are sometimes almost capriciously multiplied. Yet everywhere a marvellous range of literary and historical knowledge is shown, and logical authors long since almost forgotten are brought down from dusty shelves to illuminate, often with surprising vividness, our author's argument. The recent progress of logical discussion, since Ueberweg and Lotze, is also borne in mind; nearly all the "burning questions" of the logic of the past two decades are touched upon; our author has his views concerning the nature of negative propositions, concerning the "impersonals," concerning "existential" judgments, concerning hypothetical judgments, in short concerning the favorite problems of modern continental logic in general.

Characteristic for our author's whole attitude is, meanwhile, his position with regard to the "Algebra of Logic," which Schroeder has recently so well introduced to German readers. Erdmann postpones until a later volume (so I understand his statement on p. 431) "die grundsätzliche Auseinandersetzung mit diesem Formalismus, der dem wissenschaftlichen Gebrauch des Denkens fremd ist, und fremd bleiben muss," but he everywhere condemns its method. Boole's algebraic formulation of the principle of contradiction, in its relation to the formula

$x = x^2$, $\therefore x(1-x) = 0$, involves (p. 367) one of the "verwunderlichsten Irrungen der mathematischen Logik," and "needs no criticism." There are a number of references of the same general character scattered through this volume. Nor is the reason of Erdmann's antipathy far to seek. He is, namely, a pronounced opponent of the "*Subsumtionstheorie*" of the judgment. And the theory of the judgment is, as he tells us already in his preface, the "Brennpunkt der Logik." The geometrical method of symbolizing judgments is the natural expression (p. 247, p. 446 *sq.*) of this false subsumption theory, and, "roh" as it is, "may be of some use to the beginner." But Erdmann loses no opportunity to warn us against any extension or elaboration of it. In his dislike of the "mathematisirende Logik," and of its "formalism," Erdmann reminds us in fact of Hegel's attitude towards so much of the mathematical tendency as existed in the logic of his own time, and one is rather surprised to find Erdmann himself putting Hegel (pp. 247, 248) in the wrong company, in consequence of the latter's account of "das abstrakte Urtheil." In many respects, as a fact, Erdmann's notion of the nature of the thinking process brings him fairly near to Hegel, although in other respects the two are very far apart.

Our author's personal theory of the judgment allies him, meanwhile, to the teachers of the "Logic of Intension" in general. Intension determines extension (p. 151). The extension is the "totality of the species in a genus" (p. 134), but has nothing to do with the "Anzahl der einzelnen Exemplare" of the genus in question. The extension of the class *match*, for example, is not decreased when you burn this individual match, or when you manufacture new matches of an old sort (*loc. cit.*). Not only is intension thus prior to extension, and of far deeper significance than the latter, but, in view of the rejection of all forms of the "subsumption theory," we are driven (p. 261) to define the judgment as a "Gleichheitsbeziehung der Einordnung" — a technical expression which needs some elucidation, but which is at all events the embodiment of an interpretation of the process of judgment in terms of intension. The predicate of a judgment points out elements or groups of elements which, intensively regarded, *were already immanent* in the idea of the subject. Such is Erdmann's view.

Our elucidation of the foregoing expression must needs be inadequate, since our author's intricate argument defies successful condensation. But it is upon this "focal" point that all the rays of this treatise are indeed brought to bear; and a hint of the nature of this doctrine involves of necessity a characterization of the whole book. And such a characterization, inadequate as it must needs be, we have here to undertake.

In general, in his opening paragraphs, Erdmann defines Logic as the "science of the formal presuppositions of valid judgments concerning the objects of inner and outer perception" (p. 15). As *formal*, the presuppositions which logic studies, *i.e.* the presuppositions of "valid," or of "scientific" thinking, are to be distinguished from those *material* presuppositions which are the topic, on the one hand of metaphysics, on the other hand of special science. Logic is then (p. 16) a general or formal "normative" science of the thinking process. Its office is thus indeed different from that of the psychology of the thinking process (p. 18); but it is impossible to study norms without understanding actual processes, and if logic (p. 19) is to avoid barren schematism, the logician must base his study upon a psychological analysis of the natural history of the thinking process. To such a natural history Erdmann devotes, in fact, considerable space. The first book of his treatise (pp. 35–186), on the "*Gegenstände des Denkens*," contains much psychological material. By "objects of thought," Erdmann means the sum total of the "*Vorgestelltes*," *i.e.* of that of which we have ideas (p. 81). In his own metaphysic disposed to realism, Erdmann endeavors as far as possible to separate logical and metaphysical problems (pp. 10–12, 77, 81–85). The "*Gegenstände der Vorstellungen*" or "*des Denkens*" are therefore not, in general, for the logician, the things in themselves, or "*das Transcendente*" (p. 10), but the "objects whose elements are given to us in inner or outer perception" (p. 12). These objects it is that in science we are directly thinking about. "*Das Transcendente*" we conceive only indirectly through the objects of inner or outer experience, and it is in regard to the latter that there arises the general question of Logic (p. 12), *viz.*: "What is our right to assume the possibility of valid judgment concerning '*das Vorgestellte*'?" "*Das Vorgestellte*" itself consists either of "original objects" or of "derived objects" (p. 38, "*ursprüngliche und abgeleitete Gegenstände*"). The former correspond to Locke's "ideas" of outer and inner sense. The latter include the ideas of memory, and *die abstrakten Vorstellungen*. As for Erdmann's use of *Vorstellung*, as he explains it on p. 36, the word relates to "all contents of consciousness in which objects are presented," and "unconscious *Vorstellungen*" are self-contradictions. On the other hand, however, the process of *Apperception* (the word being used in the Herbartian sense) involves mental processes which themselves remain in large part unconscious (p. 42), and Erdmann makes considerable use of the category of the unconscious in mental life, his view of this matter coloring important logical analyses in the course of the book (*cf.* p. 77, and the argument on p. 210 with regard to Kant's doctrine of the "synthetic" judgments of perception). On the basis of this general theory of Apperception, Erdmann introduces, on p. 45,

a very characteristic doctrine concerning the process of abstraction. In abstraction, namely, one does not really get rid of the diverse features of individual objects and retain only the like elements as giving an idea of a class. The association of the like elements, in a series of objects of experience, with the unlike elements, remains for our consciousness actually the same as at first, except that it is "not so close" as it would be in case one conceived a single individual in isolation. Consciousness is, for our author, always concrete and synthetic. Our relative abstractions we accomplish, in the more complex cases, only by virtue of bringing into consciousness a series of *Vorstellungen* whose common features are strengthened through *Verschmelzung*, while the individual features of each *Vorstellung* are kept in the background by virtue of that very flow of consciousness which helps us to attend to the common features themselves. Abstraction is an affair of attention (p. 48). It does not really sunder, it emphasizes; and for its emphasis it is largely dependent upon the flow of consciousness, which presents the *Vorstellungen* that are to be the object of the abstracting process.

A passage from this theory of abstraction to the theory of judgment, as indicated above, is contained in our author's doctrine of the significance of language for the thinking process. Abstract ideas are made possible by means of "sprachlicher Ueberlieferung" (p. 49). The imagination is excited to the formation of abstract ideas by the aid and the usage of language (p. 51). In particular the whole activity of judgment depends upon language (p. 20 *sqq.*). Perception and mere *Vorstellen* can go on without speech; but judgment, which (p. 1) is the essential characteristic of the thinking process ("unter Denken soll nichts anderes als Urtheilen verstanden werden"), is impossible without some sort of language (pp. 23, 234). Erdmann undertakes more than once, and at considerable length, a psychological proof of this assertion; but admits (p. 224) that a final *experimentum crucis* is still lacking to demonstrate his position, and no doubt wisely rejects the evidence offered by those cases of *aphasia* which have been observed and cited with respect to this problem, as insufficient to prove any unmistakable result. Our author is meanwhile far from supposing that the language process is *identical* with the thinking process, and the observations on pp. 229–231 concerning the relations of the two processes are very instructive, even if one questions Erdmann's hypotheses concerning the "unconscious" side of the mental life at moments of reading or of hearing a discourse.

Judgment then depends upon language. The data of inner and outer perception, organized through the apperceptive process, give us an enormously complex *Vorstellungsleben*, where the *Verschmelzung* of similar elements in series of allied ideas gives rise to multitudinous sorts and

groupings of *Abstrakte Vorstellungen*. These in their turn are formed, held, and communicated under the influence of language. Thinking, however, is judging concerning these results of our experience and of our apperceptive process. In what does this act of judgment consist? Erdmann replies: Not in bringing together already formed ideas and uniting them two and two by a fresh "function of unity"; not in subsuming one under another; not in uniting mere names of things; not even in identifying ideas, nor yet in sundering ideas already united. On the contrary, the *Wahrnehmungsurtheil*, the simplest case of all, already typifies (p. 205) the essential nature of the process of judgment. When I say, *This paper is four-cornered*, I do not sunder the object of my sight into two thought-objects; nor do I bring into a new union two significant ideas before sundered. Neither mere analysis nor mere synthesis takes place here. But (p. 203) while the paper remains all the while just as it is for my consciousness, I bring in succession ideas of words, *Wortvorstellungen*, into my mind, and observe that two of these words, *i.e.* the pair in the compound *four-cornered*, express a meaning which *in this or that respect is identical with some of the facts already presented in my one and indivisible perception of the paper.* My perception then is, if you will, a synthesis in experience, a *Verflechtung*, of many perceptual facts. Into the unity of this perception my thought introduces, according to Erdmann's theory, no sundering whatever. What was united in the *Vorstellung* before I judged, remains united while I judge, and stays united afterwards. The new thing that happens while I judge is for the first a *Vorstellungsverlauf*, consisting of words. I observe meanwhile that these words express meanings which are identical with something that is already immanent in the perceptive unity itself. My judgment is thus a comment in successive *Wortvorstellungen* upon what already coexists in unity in the subject of my judgment. As such a comment my judgment finds predicates for this subject, but does not change the content of the latter.

The "predicative relation" is in general thus typified. The predicate is in meaning discovered to be immanent in the subject. This discovery is what the judgment accomplishes. The predicate is represented by a *Wortvorstellung*, which in so far comes to the subject from without. Yet the act of judgment does not create, but only finds the unity of the subject and predicate idea, and finds this unity as having been already existent in the subject before the judgment was made. Here is then some indication of what Erdmann means by his *Gleichheitsbeziehung der Einordnung*, which one may freely translate as the "discovery of an identity between the meaning of the predicate and a portion of the meaning already immanent in the subject."

The relation of this view of the thinking process to Erdmann's former

insistence upon the inseparability of the abstractly common and the individually peculiar elements of the objects of our generalizing consciousness, is not hard to see. There is considerable difficulty, of course, in carrying through such a notion of the process of judgment as this one in case of the more abstract and complex forms of judgment, *e.g.* in case of judgments of relation, and in the case of seemingly purely constructive judgments, such as definitions. But our author works patiently, and with much success. Negative judgments he regards with Sigwart as rejections of attempted positive judgments, and not as themselves a species of simple judgment (pp. 349–363). The impersonals proper are simply judgments whose subjects are left very indefinite (p. 307). On the whole (p. 262) he defines a judgment as "The inclusion of one object (of consciousness) in the (intensive) content of another, — this inclusion (1) being conceived as in logical immanence, (2) being determined by the identity of content of the material constituents, and (3) being expressed in a proposition."

There is here no space to follow our author into the applications of this theory. One is not surprised to find that, with his eyes fixed upon so interesting a psychological problem, he should almost wholly neglect the considerations that to many of us make the 'Algebra of Logic' so promising and important a region of exact inquiry; nor are most philosophical students likely to be satisfied with the sceptical discussion of the nature of logical necessity (pp. 372–378); and the observations upon probability, mathematical and non-mathematical (pp. 388 *sqq.*), have appeared to the present writer especially unsatisfactory. But if these matters seem to us to indicate our author's limitations, we have to thank him on the whole for a most learned and stimulating study of the problems of philosophical logic, and particularly of the problem of the judgment.

The discussion of the syllogism is extended, and full of interesting matter. A later volume is to be devoted to a general Doctrine of Method.

JOSIAH ROYCE.

Philosophische Propädeutik. Unter Mitwirkung von Professor ALEXIUS MEINONG, verfasst von Professor ALOIS HÖFLER. I. Theil Logik. Prag, Wein, and Leipzig, 1890. — pp. xiv, 244.

Both Dr. Höfler and Dr. Meinong have written on the study of philosophy in the gymnasium, and in this Logic the method of presenting the subject is no less suggestive than the material which is presented. The author quotes in his preface Bonitz's words, recommending "a strict limitation of what is given to the student as dogma," and "the fullest

stimulus to work over and appropriate the minimum of material thus given." Proceeding on this principle, the author gives but eight or ten lines of definition under each heading, and this is followed by several pages of discussion; in this discussion opposite theories are criticised, sometimes the history of thought on the topic is briefly given, and there is always great abundance of illustrative example. Although the book is intended for beginners, more attention to historical development would certainly be expected in these discussions. Otherwise the book might prove admirable in the hands of its author; but it is at least doubtful whether another could follow such an elaborate outline, without losing all life and individuality in his teaching. Another defect of this method is that the author often fails to indicate with sufficient clearness the results of his discussion. For example, the section entitled "What is a judgment?" would hardly enable the beginner to obtain a clear conception of the author's view.

In the present state of logical science the writer of a text-book has no easy task before him, but for once the savor of the middle ages remains only in a few forms. Logic is defined as "the study (Lehre) of correct thinking." It is at first identified with the psychology of the intellect, and then distinguished from this by its practical purpose. It would seem as if the word *correct* in the definition should be enough to indicate the relation of the two branches.

In the first division, "Logical Ideas" (Vorstellungen), the concept is defined as an idea with one definite meaning. This is the first element of thought, and therefore the beginning of logic is the study of the concept as true. The two most important kinds of concepts are the representable or concrete, and the abstract which cannot be represented in imagination. In accordance with the method pursued, definition and division are treated at great length and with abundant examples.

The second division, "Logical Judgments, or the theory of evidence," is written from the standpoint of Brentano. *Judgment* cannot be defined any more than can *idea;* it is a simple psychical process. This process uses ideas, and expresses a belief or disbelief in the truth of the idea (or ideas) affirmed. At the same time judgments are classified in the old way as affirmative and negative, universal and particular, categorical and hypothetical; and in this classification the view of the judgment first presented seems to be almost forgotten. The sections on the syllogism present the received doctrine with but little variation. After a rather artificial classification of inferences from a single premise, the discussion and proof of the rules of the syllogism seem especially fresh and vigorous. Instead of the brief discussion of fallacies, commonly given in text-books, the methods of proof are carefully examined, and on this basis errors in proof may be more scientifically treated.

The theory of science, and indeed the whole topic of induction, has not found a place in the German gymnasium, so that it is treated briefly, and some sections (*e.g.* the discussion of the conceptions cause and effect) are inappropriately forced into the earlier part of the book.

It is hardly possible to give a fresh and modern treatment of logic from the German standpoint, and yet keep so closely to old terms and topics as may seem necessary for a text-book. Dr. Höfler succeeded better in his first part than in his treatment of judgment and the syllogism, in combining these two aims. It is perhaps a defect, that the book hardly succeeds in vindicating a clear and distinct sphere for logic. The main purpose of the writer is to make students think, and, if I mistake not, his clear-cut definitions and wide variety of example will prove a stimulus for more advanced thinkers than those for whom it was intended.

ARTHUR FAIRBANKS.

The Elements of Logic. By JAMES H. HYSLOP, PH.D., Instructor in Logic, Psychology, and Ethics, Columbia College. New York, Charles Scribner's Sons. 1892. — pp. vii, 403.

An elementary text-book of Logic in all respects satisfactory, has long been sought by many teachers of the subject throughout the country. Jevons' *Elementary Lessons*, perhaps up to this time the book best adapted for beginners, leaves much to be desired in the way of accuracy of treatment and scientific exactitude. While confessedly owing much both in matter and in method of presentation to Jevons, Dr. Hyslop's book is distinctively an advance upon all of the elementary text-books with which I am acquainted. In a subject like formal logic an author must of course in the main follow the traditional lines, but Dr. Hyslop's experience as a teacher is shown both by his treatment of questions over which students are often left without guidance, and by his judicious omissions of irrelevant matter which many treatises on logic still retain.

The author has aimed, he tells us, "to produce a work that can be used both by beginners and for advanced students of the subject, but not for those who care to go into it exhaustively." From a pedagogical standpoint it is perhaps to be regretted that he has attempted to meet the requirements of these two classes of students by one book; or, at least, that the discussions of special theoretical questions have not been separated from the main body of logical doctrine by being thrown into separate chapters. The aim of the work is, however, primarily practical, "to direct the student in practical reasoning and correct thinking in professional vocations." For this purpose there has been

appended to each chapter a complete and very valuable set of exercises and problems. Dr. Hyslop has given completeness to the work by treating briefly, yet in a very satisfactory way, of the Quantification of the Predicate, and of mathematical and other forms of non-syllogistic reasoning. I consider the book admirably adapted for students of some maturity — undergraduates in their junior or senior year — who can devote a considerable portion of time to the subject.

I wish, however, to call attention to a few of the minor excellencies and defects of the book. One of the modifications which Dr. Hyslop has introduced into logical doctrine, and upon which he lays considerable stress, is the division of general terms or concepts into mathematical generals and strictly logical generals. He does not give any examples of former class, and his definition ("by mathematical general concepts, I mean those which are absolutely alike in their content or intension, or such as are grouped together under the same name, solely on account of their numerical value," p. 75) does not seem intelligible. The meaning, however, seems to be that the so-called mathematical generals do not connote the common qualities of a class, but are formed by the addition of homogeneous units, and so contain their individuals *in* them and not *under* them as do strictly logical concepts. But if this is so they are surely not *general* terms at all, but only an abridged form for a number of singular terms. As for the distinction made (p. 93) between the mathematical and logical genus, it does not seem to mean more than that the genus may be regarded both from the point of view of extension and intension. There may, however, be some advantage in adopting the term *Conferentia* to denote the genus in the latter sense as opposed to the *differentia*. In testing the valid moods in the different figures the author would have done better to have followed Überweg. In his treatment of the Sorites he has neglected to point out the rules which this form of reasoning must obey. His classification of fallacies is excellent, the grouping of material fallacies as Fallacies of Equivocation and Fallacies of Presumption being particularly happy. It seems a mistake, however, to substitute for the descriptive "Undistributed Middle," the more technical phrase, "Illicit Process of the Middle Term," as a name for the well-known fallacy.

The author has very carefully and accurately distinguished Induction from other processes not properly reasoning at all, as well as from deductive inferences. "The probability of an inductive inference is the result of an inference from established facts, and *so is due to going beyond the premises under the stimulus of certain general principles which may be called the Principles of Induction*" (p. 315). In treating of the Inductive Method in the last chapter Dr. Hyslop says that the

whole process may be included in two general classes, Acquisition and Verification. It would be better, in my opinion, not to group the forming of the hypothesis which is an inference, a pure process of inductive reasoning, with the more passive processes of Observation and Classification.

J. E. CREIGHTON.

Leibniz und Spinoza. Ein Beitrag zur Entwicklungsgeschichte der Leibnizischen Philosophie. Von Professor Dr. LUDWIG STEIN. Mit neunzehn Ineditis aus dem Nachtlass von Leibniz. Berlin, Druck und Verlag von Georg Reimer, 1890. — pp. xvi, 362.

In this able and scholarly work the editor of the *Archiv für Geschichte der Philosophie* has added to the debt of gratitude which all earnest students of philosophy already owe him. That the philosophy of Leibniz bore an intimate relation to the system of Spinoza was felt, as Professor Stein points out, even in Leibniz's own lifetime; and ever since the controversy between Mendelssohn and Jacobi as to Lessing's views, the precise relation of the two philosophers has been a subject of dispute. No satisfactory conclusion, our author contends, is possible, so long as the 'speculative-constructive' method is employed: and therefore he has had recourse to the 'literary-historical' method, now generally recognized to be the true one. The completion of Gerhardt's edition of Leibniz's philosophical works, and the discovery, in the Leibniz archive at Hanover, of nineteen new pieces (now published in this volume as an Appendix), have enabled the author not only to show that the association of Leibniz and Spinoza was for a short time of a close and intimate kind, but to throw light upon the mental development of the former in all its stages.

Under Dr. Stein's enlightened guidance we learn that up to the age of twenty-five, Leibniz (b. 1646) was on the whole a follower of Hobbes, or rather he adopted the mechanical conception of Nature in the form set forth by Hobbes, though he never ceased to believe that it was capable of being reconciled with his early religious conceptions. From 1672 to 1695 his attitude towards Descartes is one of doubt. Even in 1670, though he accepts the Cartesian doctrine that the essence of matter consists in extension, he is sceptical of its conception of force; and in 1672 he raises the difficulty that, if matter is pure extension, a body cannot alter in size without losing its reality. But it was only about 1675 that he became profoundly dissatisfied with Cartesianism. In this dissatisfaction he was strengthened by his intercourse in Paris with Tschirnhausen, from whom he learned that Spinoza like himself had revolted from Descartes, and in particular that he

denied the Cartesian definition of matter, and did not entirely accept the laws of motion as formulated in the "Principles." From Spinoza, then, might he not get valuable aid in reaching a truer conception of things? Stimulated by this idea, he sought, and after some difficulty obtained, the favor of a personal acquaintance with Spinoza at the Hague, and was even allowed to take away with him a copy of the initial definitions, axioms, and propositions of the *Ethica*. His interest in the philosophy of Spinoza was, Dr. Stein contends, very great, as his correspondence with Schuller (1677–78) clearly shows. Thus, in a conversation with Eckhardt, in April, 1677, he maintains, with Spinoza, that the existence of God follows from his very nature (*Deus est ens, de cujus essentia est existentia*). So, he holds that God *esse ens a se, seu quod existentiam suam a se ipso, nempe a sua essentia, habeat* (*cf.* Spinoza's definition of *causa sui*). He also accepts the view of Spinoza that pain is something positive, not a mere want or privation. On the publication of the *Opera Posthuma* in January, 1678, Leibniz read through the *Ethica* in a few days, and, in a letter which Dr. Stein prints in his Appendix, he says that it contains "a number of beautiful and true thoughts," together with certain "paradoxes" which he cannot accept. Of these "paradoxes" those which he most decidedly rejects are the denial of intellect and will to God as *natura naturans*, and the denial of final causes. We may say in fact that, when Leibniz began to see that Spinoza denied self-consciousness to God, and, therefore, reduced the processes of nature to a blind necessity, the hope he had entertained of finding in him the antidote to Descartes received its deathblow. Thus he was thrown into a state of mental unrest, which lasted till about 1686. Meantime he clung to his early faith that there was a divine purpose in the world, and his main problem was to reconcile this idea with the inviolability of law, which he held with equal tenacity. This explains why his polemic against Descartes is so bitter and unsparing. "I have no hesitation in saying," he writes in a letter to Philippi, 1679, "that the philosophy of Descartes leads to atheism." This harsh judgment he seeks to justify on the ground that Descartes virtually denies that there is any purpose in nature, inasmuch as he affirms that "matter assumes in succession all the forms of which it is capable," — in other words, is under the dominion of a blind necessity. Such a view, he says, necessarily leads to the denial of intelligence and will in God, and hence Spinoza is simply Descartes developed to his logical consequences.

In this period of search Leibniz seemed to find in Plato what he had in vain sought for in Spinoza. He repeatedly quotes the well-known passage of the *Phædo*, in which Socrates is made to say that only in the changeless idea of the 'good' can the ultimate explanation of the

world be found. At the same time he was seeking, from the other side, to deepen the conception of nature. Thus, in his *De vero methodo philosophiæ et theologiæ* (1680), he maintains that all bodies are endowed with force, as well as extension, though he has not yet reached his conception of the individuality of substance. Professor Stein finds in Plato's view of the 'ideas' as the only active causes of things (see the *Phædo*) the suggestion of this advance towards the monadology. Still, as he points out, it would be a mistake to think of Leibniz as merely borrowing from Plato, the truth being that he simply found in Plato that which helped him to answer his own problem. Similar was his relation to Aristotle, or rather to his scholastic followers, especially Aquinas. In the essay just mentioned he speaks highly of the scholastics, and later he commends the Aristotelian conception of 'entelechies' or 'substantial forms'; indeed, even when in 1686 he published, in the *Discours de Métaphysique*, the first draft of his own theory, it is under the name of 'substantial forms' that the doctrine of the 'monads' appears.

To appreciate the conscientious industry and the acumen displayed by Professor Stein in tracing the gradual growth of the various parts of Leibniz's philosophy until they coalesced in an organic system, his book must itself be read. The reader will there find, among other things, an interesting discussion of the origin of the term 'monad,' and a concluding chapter in which, after the birth of his own philosophy, Leibniz is seen, at least in public, as the uncompromising foe of Spinoza.

Nothing but commendation can be bestowed upon such a work as this. I believe the conclusions reached by the author, in the prosecution of his 'literary-historical' method, to be on the whole sound. But, perhaps, it may not be superfluous to point out a danger which is apt to beset that method. In such hands as Dr. Stein's, speculative insight is combined with patient investigation and judicious inference; in less skilful hands the method he sets up as a rival to the 'speculative-constructive' is apt to result in mere biographical gossip, throwing no real light upon the history of philosophy. As the late Professor Green remarked, "it is possible for knowledge about philosophers to flourish inversely as the knowledge of philosophy."[1] And even at the best, as it seems to me, the 'historical' method can only prepare the way for a 'speculative' — which need not be a 'speculative-constructive' — method. When we have learned that Leibniz passed through a Hobbes-stage, a Cartesian-stage, a Spinoza-stage, and that in a certain year he was occupied mainly with a certain philosopher,

[1] Green's Hume, I, 4.

we have still to ask what was the value and the relation to one another of the stages through which he passed, and of the ideas so occupying him. The history of the struggles of the individual thinker towards a new conception of things may throw much light upon the application of ideas, if the historian is himself a man of speculative insight, but not otherwise; and, in any case, occupation with biographical details is apt to distract attention from the evolution of thought, which after all is the main thing in these remarks. I have had no desire to minimize the value of such an investigation as Dr. Stein has conducted with characteristic skill and judgment, but only to enter a *caveat* against the abuse of his historical method, and the undue importance which some are apt to attach to it.

JOHN WATSON.

Riddles of the Sphinx: A Study in the Philosophy of Evolution. By A TROGLODYTE. London, Swan Sonnenschein & Co., 1891. — pp. xxvii, 468.

We have before us in the present work a complete system of philosophy in outline. Its aim is to construct a modern metaphysic on the foundation of the latest results in science. With a firm faith in the possibility and practical value of philosophical investigations, our author nevertheless admits that it is only by its success in explaining the problems of life that philosophy can be justified. "We may claim that, if the scheme of things is rational at all, it should not mock our reason with puzzles that are insoluble. We must assert that either the human reason is competent to solve all the difficulties that human minds can properly feel, or that in all things it is the plaything of an unknowable, unmanageable and inexorable perversity of things" (p. 136). In Book I the author shows that the logical outcome of denying the validity of philosophic thought is scepticism and pessimism. The chapter on 'Agnosticism' is devoted principally to a criticism of Spencer and Kant as the representatives of scientific and epistemological agnosticism respectively. But if agnosticism were true, our author contends, it cannot stop with itself but must pass into scepticism. "If the Unknowable is at the basis of all knowledge, if all things are 'manifestations of the Unknowable,' how can it manifest anything but its unknowableness? If all our explanations terminate in the inconceivable, are they not *all* illusions?" (p. 56). In the following chapter on 'Scepticism' all the usual arguments for the general invalidity of knowledge are ably presented. Particular attention is given to the inadequacy and inconsistencies of the conceptions forming the first principles of science: Time, Space, Motion, Matter, Force, Causation, Substance, Becoming, Being. The

necessary emotional reflex of intellectual scepticism is 'Pessimism,' which is the subject of the concluding chapter of this Book. It is "essentially the theory of the inherent perversity of things, rendering all the aims of life illusory." It denies that anything can be made of life, because life is hopelessly irrational and its conflicting aspects are insuperable. "It takes the main activities of life, the main aims of life which are capable of being desired for their own sake, and shows how in each case: (1) their attainment is impossible; (2) their imperfection is inherent and ineradicable; and (3) the aggravation of these defects is to be looked for in the course of time rather than their amelioration" (p. 97). Happiness, Goodness, Beauty, and Knowledge are each presented as ideals of life and the pessimist's arguments for their impossibility given. Particularly interesting in contrast with the optimism of Spencer's *Data of Ethics* are the pessimistic conclusions here drawn from the doctrine of Evolution.

Book II discusses the proper methods and data of philosophy in the light of modern science. The one indisputable fact and basis of philosophy is the reality of the Self. Rejecting epistemological and psychological methods because they fail to take account of the historical development of the mind, we find three methods left: (1) the physical or pseudo-metaphysical, which attempts to extend the method of the physical sciences to the solution of ultimate questions; (2) the abstract metaphysical, which attempts to state the whole truth of all reality in terms of thought abstractions; and (3) the true method, the concrete metaphysical, which combines the advantages and avoids the defects of the other two. This agrees with the second in explaining the lower by the higher and with the first in admitting the intrinsic likeness and continuity of all existence (p. 450). We must proceed from the phenomenally real to the ultimately real, thus basing our metaphysics on science and making it concrete. The last two chapters of this Book — "The Metaphysics of Evolution" and "Formulas of the Law of Evolution" — are highly interesting and will repay careful study. In the former the author reaches the conclusion that if the scientific theories of evolution are true, "the prothyle or pure potentiality of the whole phenomenal world implies a prior actuality, *i.e.* a *non-phenomenal cause* of its evolution and so a transcendent Deity becomes necessary, of whose purpose the world-process is the working out." The true significance of things lies in their end, and all explanation is ultimately teleological. A process is necessarily finite and so the world, if it is in process, must have a beginning and ending in time. In the latter chapter he proposes as a substitute for the evolutionary formulas of Spencer and von Hartmann: "All real progress concurrently develops both the individual and the social medium. It is a development of the individual in society, and of society through

individuals" (p. 218). This formula is tested by its application to the course of evolution in all its principal stages.

In Book III our author applies the principles established to the construction of his own *Weltanschauung*. Whatever is real is finite. The extended world and space — the world-process and time — all are finite. Time, Becoming, and Evil are the corruptions of Eternity, Being, and Perfection. Eternity is not the negation of Time, but the ideal into which Time is ultimately to pass. Matter is a form of Force. Force implies a sense of effort, hence intelligence and will. An atom is a constant manifestation of divine Force or Will exercised at a definite point. Force implies resistance. The divine Force or God must interact with other ultimate realities, *viz.* ourselves. The one ultimate reality, God, appears to us as the material world; the other ultimate realities, the Transcendental Egos, appear as our present phenomenal selves. The cosmos of our experience is a stress or interaction between God and the Egos. God is finite, one among the Many, their supreme ruler and aim, and not the One underlying the Many. As the Egos are ultimate realities, God cannot annihilate them; the most that can be done is to bring them into harmony with the Divine Will. The world-process is designed to bring this about. It is the finiteness of the Deity that makes this long and arduous process necessary. Evil is imperfect harmony with the divine will, and as God is not infinite he is not responsible for this resistance and disharmony on the part of others. In order to subdue the resisting Egos which he cannot destroy, the Deity immerses them in Matter, thus reducing them to an all but unconscious state and gradually accustoming them to the order which the divine wisdom has seen to be best. It is the function of matter to repress consciousness. The Transcendental Egos that underlie our phenomenal selves and are at once the basis and end of our development are eternal and immortal. The question of *our* future life depends upon the relation of the self to the Ego. In so far as the self is spiritually developed, and has attained to its ideal, the Ego, it will persist in the future. Possibly a single Ego may be manifested in several selves and this may explain Sex and Love.

The work closes with an appendix of ten pages on "Free Will and Necessity." We make no attempt at a criticism of details. Doubtless some of the apparent inconsistencies and difficulties are due to the necessary limitations in treating so large a subject in so brief a compass. The author's avowed contempt for epistemology and his uncritical acceptance of individualism seem to us sources of real weakness to the work as a whole. The polemic against Infinity deserves comparison with Locke's attack on Innate Ideas, and it is in this that the work makes its most important contribution to metaphysics. The style is clear, and

the careful analysis of contents is a commendable feature of the book. We confess to some repugnance to a philosophical work which appears anonymously and with a fancy title, but we hope that students will not be led by this to neglect such an earnest and careful study of metaphysical problems.

F. C. FRENCH.

The Philosophy of Descartes in Extracts from his Writings. Selected and translated by HENRY A. P. TORREY, A.M., Marsh Professor of Philosophy in the University of Vermont. [*Series of Modern Philosophers.* Edited by E. Hershey Sneath, Ph.D.] New York, Henry Holt & Co., 1892.—pp. xii, 351.

To one who has compared the present volume at all carefully with the complete works of the philosopher whose doctrine it is designed to give in substance, it is suggestive both of the possibilities and of the inevitable limitations of a volume of selections. Whether such books are calculated to promote sound scholarship, is a question which each succeeding volume of the series here represented will help to answer.

The selections are preceded by two brief introductory chapters, one on the "Life and Writings" of Descartes, the other on "The Philosophy of Descartes and its Influence." These treat only of the salient points of the philosopher's life and doctrine, and very properly leave it to the teacher to direct his students to the histories of philosophy for further information. The book is also provided with a bibliography and an index. As Professor Torrey states in his preface, the translations are made, with one exception, from the French text of Cousin's edition of Descartes's works. The extracts from the *Principia* are translated from the Latin text of an Elzevir edition of the *Opera Philosophica*, Amsterdam, 1677. It will be thought unfortunate by many that, in all cases except the one just indicated, the translator has neglected the Latin text. It was certainly proper to translate the *Discours* from the French, since that was the original text, but the Latin translation is somewhat important, since it was revised by Descartes himself and in some passages changed from the original. But whatever reasons there might have been for using only the French text of the *Discours* would seem to hold for using only the Latin text of the *Meditationes*, in the case of which work the conditions were exactly reversed. Very likely the translator might acknowledge this, and yet justify himself on the ground that the French edition of Cousin is the complete edition most readily procurable. Indeed, considering that this volume is intended for beginners, it may be that Professor Torrey has chosen the less of two evils; for certainly no volume of selections should be used where the complete text is not at hand for constant reference. The translations read very well, and seem

to be accurate in all cases where they have been compared with the originals.

Of course there is room for much difference of opinion as to what should be included in a volume like this, but on the whole the selections seem to have been made with excellent judgment. Not only are entire paragraphs given, as a rule, but the portions of the different works from which selections have been made are ordinarily quite well represented. The selections are from the following works: *Discours de la Méthode, Regulæ ad Directionem Ingenii, Meditationes de Prima Philosophia, Principia Philosophiæ, Le Monde, De l'Homme,* and *Traité des Passions de l'Ame.* The selections from the *Discours* are from the first three parts only, the last three being omitted because they discuss matters treated in other writings. It certainly was a good idea to include a translation of the essential portions of the *Regulæ.* As will be remembered, Kuno Fischer says, "What the *Discours* compresses into four short rules, and only stipples, as it were, *The Rules for the Direction of the Mind* develop in detail, though not completely." The *Meditationes* seem to have been reduced only about twenty-five per cent, while the *Principia* is very inadequately represented by an extract of fourteen pages. Sixty-five pages are given to *Le Monde*—a liberal allowance; but here one misses the numerous explanatory diagrams, which, of course, it was impracticable to reproduce in a book of this kind. The extract from *De l'Homme* and that from a letter to Mersenne on the automatism of brutes together occupy only twelve pages, most of the remainder of the volume being devoted to the *Traité.* The last fifteen pages are taken up with extracts from letters by Descartes on the happy life and the highest good.

If one were to criticise the principle upon which the selections have been made, he would probably suggest that it would have been better to cover rather less ground somewhat more thoroughly. For instance, such fragments as are given from the *Principia* and *De l'Homme* are altogether inadequate, while one occasionally misses important passages in the selections from the *Traité.* As a volume of selections, however, the present one is in the main satisfactory. But the question arises, Why make a volume of selections from the works of Descartes at all? None of his most important works are very long. Professor Veitch has already given us a good translation of the *Discours* and the *Meditationes* entire, and of most of the *Principia.* Of this the teacher of philosophy can have his class use as much or as little as he pleases. Would not the translator of the present volume have done more to merit the gratitude of his fellow-teachers by giving them for class use an equally good complete translation of the *Regulæ* and the *Traité,* and also of *Le Monde* and *De l'Homme,* if space permitted and the omission of the diagrams (which

might be too expensive to reproduce) did not seem too serious a disadvantage? Perhaps he may yet see fit to do so.

ERNEST ALBEE.

Loyola and the Educational System of the Jesuits. By THE REVEREND THOMAS HUGHES, of the Society of Jesus. [*Series of The Great Educators.* Edited by Nicholas Murray Butler.] New York, Charles Scribner's Sons, 1892. — pp. ix, 302.

It would be easy to find fault with the panegyric on his order and its educational career which Father Hughes has given us. But its very faults, — its needlessly apologetic attitude, the narrow range of its sources, the scantness of its sympathies and of its visions, its chaotic historical method, its unconscious pedantries and half-conscious equivocations, even the polyglot flavor of its style and its un-English punctuation, — while they make it come somewhat short of that "adequate description and criticism" of its subject promised by the editor of the series, yet make it the better exponent of the great system of which it is not only an exposition, but a product. Of criticism, indeed, in the current sense there is nothing in Father Hughes's book. Painfully conscious though he is of the odium resting on his order, he never tells us the precise charges against its work. To him emulation and artificial rewards are incentives to study as blameless as they are effective. He is proud of the "consistent uniformity of doctrine" and the "intellectual concord" which "it may be difficult to find, or at least to ensure, outside of an organization such as the Society of Jesus"; for, as he conclusively adds, translating the first great Jesuit code of instruction, "the most learned men have always been persuaded that there is more subtlety shown, more applause merited and comfort enjoyed, in pursuing the lines of approved and received thought, than in a general license and novelty of opinion." To show subtlety, to merit applause, to enjoy comfort: what more could teacher or student seek? Nor does it trouble Father Hughes that the system of education he expounds takes thought neither for the search of truth as truth nor for the development of man as man. He does not, indeed, urge the system as a final one, and he points out the changes it has undergone; but he has neither strictures for its past nor suggestions for its future.

But, if Father Hughes is so blind to Jesuit defects as even, with touching naïveté, to take for sober praise the irony of Frederic of Prussia, he is keen-eyed to the real merits of his order's work; and nobody can read his pages without a fresh sense of the sources of its power. Its organization, its method, its trained teachers, its freedom to all, its democracy of spirit, its flexibility and tact, its courtesy and deference, are set forth with clearness and warmth. The book, like its

title, falls into two parts, a historical and a systematic; and only in the latter is the author at his best. His facts he draws most largely from the documents gathered with such loving zeal by Father Pachtler for the *Monumenta Germaniæ Pædagogica*.

But the deepest secret of the Jesuit teachers is not to be found in the thick volumes of Father Pachtler, nor in all the tomes of Jesuit lore for whose titles Father Sommervogel is ransacking the corners of the earth. Not in their learning, not in their method, not in their manners, lay the essence of that strange power which for centuries drew to their schools and then into their order, regardless of wealth and career, of pleading fathers and of weeping mothers, of threatening courts and often of a frowning church, the flower of young manhood from both Catholic and Protestant Europe. It was in the charm of their personality. Explain it as we may, call it craft or enthusiasm, count it the Holy Spirit, as did their friends, or witchcraft, as did their foes, this was their perennial fascination for boys. They taught by hand; and this vitality of all their work, this repugnance to the mere set lecture, this humanizing companionship with their pupils, however it offend our modern gospel of salvation by facts, is the only answer to the riddle of their influence. The old annals are full of the tales of its magic, and its day is not yet over. Not Father Pachtler's records, but the vibrant voice, the mellow laugh, the noble and sunny face that smiled out from the flowing locks of Father Pachtler's snowy hair — not Father Sommervogel's toilsome bibliographies, but Father Sommervogel's own courteous patience and ready sympathy — these it is that hold the real secret of the Jesuit schoolmaster. And it is a high merit of Father Hughes's book that he not only does not overlook this, but that some sense of it — some touch, perhaps, of his own personality as a teacher — he leaves with us.

An oversight or two may need mention. We are told that with the Jesuits education first entered into the fundamental plan of a religious order. Perhaps the author does not count the Brethren of the Common Life strictly a religious order; but can he ignore the Dominicans? One of his citations from Frederic the Great (pp. 78, 79) is not to be found in the letter to which he ascribes it; and the printer should not have been suffered to make Ganganelli Pope Clement XIII.

GEORGE L. BURR.

Aristotle and Ancient Educational Ideals. By THOMAS DAVIDSON. [*Series of the Great Educators.* Edited by Nicholas Murray Butler.] New York, Charles Scribner's Sons, 1892. — pp. xiii, 256.

Students of the history of philosophy and pedagogy will find in this volume of Davidson an excellent presentation of an interesting subject.

The book is published under the general editorship of Nicholas Murray Butler in the series "The Great Educators." The author prefaces his account of Aristotle by a somewhat detailed history of Greek education up to his time and traces the post-Aristotelian period briefly to the Neo-Platonists. As an Appendix, is added a chapter on "The Seven Liberal Arts." The author's plan, as stated in his preface, to show in this way "the past which conditioned his [Aristotle's] theories and the future which was conditioned by them" will, I think, find approval with every reader. There will be no one, however, who will not regret that more was not said about Aristotle, to the presentation and discussion of whose theories only fifty pages are devoted. The chapter on Plotinus, whose position in the history of pedagogy is unimportant, might easily be spared and the space given to the further elucidation and criticism of Aristotle's ideas. Brief, however, as this account of Aristotle is, one does not know where to look for so direct and lucid a treatment of this side of the Stagirite's philosophy. The German books, to which in the main we have to look for the history of ancient educational institutions and theories, are so fortified with quotations and references to all kinds of authorities that it is like scaling a bristling rampart to get at them, and the references frequently constitute their greatest worth. By this I do not mean to depreciate the great value of this minute and painstaking sifting of authorities and piling up of evidence; all trustworthy history must go back to such data. But these books cannot fairly be called readable, except to *Fachgenossen*, and consequently they are not directly serviceable to a great number. What we needed in English was just such a book as Davidson has given us, — scholarly, interesting, and sufficiently detailed. It is not such a book as will be the special delight of a student engaged in research at a German university, and it was not meant to be. But for the student of the history of philosophy who wants a careful, orderly, and lucid treatment of this subject, without a mass of critical paraphernalia of which he will probably make no use, I can commend him to no better book. Almost the only quotations which the author employs are in the way of mottoes at the heads of chapters; these are always *apropos* and are made with such skill and fulness as to be light-giving.

In discussing the rise of philosophy among the Greeks, Davidson says (p. 22) that at first the new spirit turns to nature with the question, *What?* "but, gradually discovering that the answer to this brings no complete explanation of the world, it propounds its other questions. It thus arrives at a consciousness of four distinguishable elements in the constitution of things, — four causes (αἴτια, αἰτίαι), as they were termed, — (1) matter, (2) form, (3) efficiency, (4) end or aim. At the same time and by the same process it is forced to a recognition of the presence

of reason (λόγος) and intelligence (νοῦς) in the world, since form, efficiency, and aim all presuppose both." This classification of causes which Aristotle gives us comes into the philosophical consciousness long after the rise of philosophy; though as individual causes an understanding of some of them was implied in philosophy previous to Aristotle's, reducing them to classified form and showing their mutual relationship and dependency. The Anaxagorean νοῦς, however, is in time prior to them. It is true that the introduction of the notion of end or aim into philosophy is simultaneous with that of νοῦς. But I think it an anachronism to state the matter as the author does. A few pages further on, in characterizing the "Old" (776–450 B.C.) and "New" (450–338 B.C.) Education, Davidson calls the "New Education" rationalistic and "liberal," "whose aim was the training of formidable individuals, self-centred, law-despising, time-serving, and cunning." This seems to me a strong over-characterization of the pedagogical spirit in the age of the Sophists, Sokrates, Aristophanes, and the first activity of the academy. Even the Sophists, and they are doubtless with most writers a somewhat abused set, do not deserve the adjectives here employed, if we are to be guided by contemporaneous literature. Further than this I venture no disagreement with the author, nor any emendation, save perhaps the insertion of Schmidt's *Geschichte der Pädagogik*, Vol. I, in the bibliography. Three years ago a fourth edition of this work was prepared by Hannak. If the same standard of excellence is maintained in the remaining volumes of this series of "The Great Educators" as Davidson has set in this delightful presentation of Aristotle, we shall have an admirable set of manuals on the history of pedagogy. The chapters on Aristotle's "Theory of the State" and "Pedagogical State" are model pieces of work, full of suggestion and good interpretation.

WILLIAM HAMMOND.

The Right of the State to Be. An Attempt to Determine the Ultimate Human Prerogative on which Government Rests. By F. M. TAYLOR, PH.D. (U. of M.), Professor of History and Politics in Albion College, Lecturer in Political Economy, University of Michigan (1890–91). Ann Arbor, Michigan, 1891. — pp. 109.

This is a thesis for the Doctor's degree, and a thesis of unusual excellence. It is a striking and a welcome proof of the increasing thoroughness of the philosophical work done in our universities.

The thesis falls into three parts, of which the first formulates the problem, the second gives a critique of previous solutions, and the third states and defends the theory of the author. The author at the outset

assigns a central position to personality, asserts the reality of an absolute jural order, and then considers the state as an instrumentality for coercively maintaining a particular version of that jural order. His problem therefore is, "By what right does the state exist, and exercise restraint over the individual will?" That this question, which is nowadays seldom raised, cannot be rationally avoided, the author shows by proving (1) that "the continued existence of the state depends on the free and so responsible action of human beings," and (2) that "under the absolute jural order, the right of the individual to free self-determination is so evidently original, primordial, essential, that every act limiting that right demands special justification." This vindication of the reality of the problem, which I consider the most acute and original part of the thesis, is a fine example of clear and resolute thinking upon a subject in the treatment of which such thinking has come to be very uncommon. Writers on ethics, politics, and social science, are fond of describing society as an organism; nor is this unnatural, for biology is the dominant science of the day, as physics was in the eighteenth century. But the metaphor of the organism, though juster, is scarcely less misleading than the metaphor of the machine; and Dr. Taylor goes to the root of the matter when he asserts that "the essence of a state is to be a community which is *formally*, *consciously*, *freely* organized,—which therefore has passed beyond the stage of a mere organism into that of an *organization*: that is, it has become a free, conscious, rational working together of men for a common end." The person, therefore, being the metaphysical and ethical *prius* of the state, by what right does the state coercively impose an alien law upon him? This was the question which the social contract theory endeavored to answer, not as is often supposed the very different question of the historical origin of the state.

The second part of the thesis gives a highly condensed exposition, a minute logical classification, and a somewhat too brief and summary criticism of the various theories of the ultimate prerogative on which the authority of the state rests. Even if some of the criticisms are prejudicial to the theory which the author afterwards advances, they serve to make these twenty pages a useful conspectus of the *cons* as well as the *pros* of what has been thought and written upon the subject.

The author's own theory, which is sketched in Part III (pp. 79–105), is contained essentially in the following proposition: "To every person as such belongs the prerogative of rule, *i.e.*, the prerogative of coercively interfering with the liberty of other persons in order to maintain the first person's version of the jural idea." To this must be added that among any number of persons the prerogative of exercising final authority belongs to the fittest, and therefore also to persons acting collectively rather than to persons acting individually, and above all to the whole

community, or man in general, rather than to any particular associations of men.

It may, however, be asked if this theory answers the query which Dr. Taylor raises in an earlier part of the thesis: "You have a good thing, but *whence your authority to impose it on me?*" It may be perfectly true that it is because man is "a living incarnation of absolute reason . . . that he is fitted to be the middle term between that absolute order and the concrete order of right"; but does this provide any warrant or authority (force apart) for the majority of that incarnated reason imposing their will upon the minority? If, on the other hand, the minority acquiesce, because they recognize that the law corresponds to an eternal order of right, would not the notion of authority be explained, simply by abandoning it altogether? The author's "direct argument" for his theory is not convincing. He argues that authority has been committed to the individual man on the ground of "society's evident and imperative need of a ruler, the absence of every other possible candidate than man, taken individually, and the high degree of fitness which he can bring to the office." Or, to express the same thought epigrammatically, "His [man's] capacity to rule is his commission to rule: he needs no other." I consider a more weighty argument for the theory the "indirect" confirmation it receives in our estimate of revolutionary leaders like Cromwell. Such an one, as the author justly observes, — with a touch of that technical language he rather too much affects, — "needs no commission from society or the community, from any man or set of men, for, as a rational being, a true concrete universal, he has ample commission in himself."

J. G. S.

The Ethical Philosophy of Samuel Clarke. Inaugural Dissertation presented to the University of Leipzig for the degree of Doctor of Philosophy. By James Edward Le Rossignol. Leipzig, G. Kreysing, 1892. — pp. iv, 97.

The author's method is for the most part historical and comparative, and the dissertation is furnished with abundant references to books and authorities. Considerable space is given to short accounts of writers from Bacon to Mill, who shaped the ethical interest of Clarke's time or developed ideas similar to his at a later period. Dr. Le Rossignol finds that Clarke cannot be regarded either as a disciple of any school or as an eclectic, and prefers to call him rather "a product of the times in which he lived." Most directly influenced by previous English moralists, his views about the nature and place of Moral Philosophy are inherited from the Stoics, and his doctrine of the ethical end and

of the relation of the passions to the reason suggests the same influence. In his metaphysical thought relative to the existence of the material world and the freedom of the will, he follows the arguments of Descartes and the Occasionalists, while his basal idea of "moral perception" is assimilated to Locke's definition of knowledge.

In Chapter III, which is devoted to the exposition of Clarke's ethical theory, the author points out the influence of the current belief in a mathematically exact science of ethics, criticises Clarke's peculiar doctrine of the differences and the fitness of things, and notes the inconsistencies in his treatment of motives. Clarke did not attempt to establish a complete system of ethics apart from religion. On the contrary, he believed that revelation alone could reconcile the apparent contradictions within the moral sense and offer a supreme end in which virtue and happiness should be inseparable. This characteristic of Clarke's ethics is emphasized again in the conclusion, where, under the heading, "Further Development of Clarke's Ideas," mention is made of later discussions of "the moral faculty" and "the moral standard." Here Dr. Le Rossignol finds that the utilitarian sources of the feeling of obligation are incomplete, and notes sympathetically Clarke's claim that no explanation of the facts of the moral consciousness is possible which does not assume a future life. But he does not indicate whether he regards this solution of difficulties as having any other interest than the historical one assigned to Clarke's system in the preface.

LOUISE HANNUM.

Das Problem der Ethik in der Gegenwart. Ein Beitrag zur Lösung desselben. Von HANS GALLWITZ, Stadtpfarrer und comm. Superintendent in Sigmaringen. Göttingen, Vandenhoeck und Ruprecht's Verlag, 1891.—pp. viii, 272.

Although this book has for its ultimate aim the solution of a problem which is theological, it deals with ethical questions to such an extent and in such a manner as to be a fit object for criticism in this place. It is, indeed, a peculiar production, displaying a scientific spirit and a full appreciation of the results of modern philosophical thought, and yet, at times, adhering to notions that science as such must reject. But, with whatever suspicion we may regard the author's enterprise, we must at least give him ample credit for the purely scientific way in which he approaches the subject. The preface, it is true, gives no promise of this merit, but formulates a problem which, in my opinion, does not confront philosophy at all, unless we return to the intellectual practices of scholasticism. The question, How can the Christian faith that God revealed himself in Jesus Christ be reconciled with the scientific fact

that no individual knowledge can be the norm for all times? or, "How can the universal be present in the particular, the absolute in the historically concrete, the divine in the human?" concerns dogmatic theology only.

In a purely Socratic manner, Gallwitz proceeds to search for a moral principle, endeavoring first to mark off the sphere in which morality moves. "The predicate 'moral' is ascribed to an act not on account of the act itself but simply because that act is, under the given circumstances, a consistent expression of the agent's character." What, then, is this organ of morality? The human will alone, apart from its relation to the phenomenal world, as Kant would hold? No, for the human personality is a unit, a whole, whose development is conditioned by its interaction with the external world. We cannot limit morality to the sphere of moral willing, but must take account also of the technical aspect, of the moral *Können*. Nor is it proper to designate feeling as the sole organ of morality, after the manner of hedonists, though feeling, to be sure, cannot be altogether excluded from a science of ethics. Neither can the sensuous functions be separated from the mental functions. The organ of morality, the author concludes, is the entire, undivided, sensuous-mental (*sinnlich-geistig*) human personality, in its interaction with the external world. But what is the principle by which we measure the content of the territory thus marked off? Now, inasmuch as a moral act is a combination of natural excitations and reactions of the personality, ethics must be teleological. But the utilitarian theory demand, though satisfying this, is insufficient, because it fails to do justice to the subjective factor. Furthermore, it is irreconcilable with two facts: (1) that moral rules command with absolute authority; (2) that they disregard the wishes of the actor. Besides, the assertion that it is external nature alone which impels a man to moral action rests on the false assumption that external occurrences are uniform and act uniformly on the subject. The notion of law is, however, a mere abstraction, which introduces into reality a uniformity (*Gesetzmässigkeit*) foreign to it. The general proposition that pleasure determines a man to develop his faculties and further the common weal does not hold, for the feelings of different persons on occasion of the same natural excitations show differences. In short, utilitarianism cannot explain the most important phenomena of moral life. Welfare or happiness is the end of life; moral laws serve that end. But the individual morality of a people may bring it pain and even death. Moreover, men do not consciously aim at this end.

A survey of history shows us that a nation aims not at the mere maintenance of life but at the security and preservation of its *individuality*. The ego does not strive after pleasure. It is determined by law to

follow the power impelling it onward and to fulfil its historical vocation. "The type inherent in the ego as germ must be developed even at the expense of life." "The choice of moral ends is determined for the personality by the inexorable law of its individuality." Personality, then, is the ideal. Since, however, it cannot be developed in isolation, there arises the duty to participate in social life. But, "in situations where the assertion of individual life of personality conflicts with the maintenance of civilization, *i.e.* social ends, the regard for the latter must unconditionally vanish, in order that the ego may preserve its freedom and individual peculiarity." Only that power which has made for the subject its individuality can reveal to it the law of its own being. No fixed formula or principle can be discovered that shall be binding for all personalities. Habits and customs as expressed in conscience generally guide us. In exceptional cases acts are due to the pressure of a given situation, some slumbering predisposition is aroused by some external object or other in which the deity reveals itself.

There can be no perfect morality without religion. It requires a life in God, an understanding of his thought moving the universe. We must believe in the moral order of the world. No scientific contemplation of nature or of history alone could inspire such a faith. The highest good can be given only in a unique moral personality, in which the essence of God and morality reveals itself. Such a personality is Jesus Christ, whose conception of the universe reveals all the dark, mysterious features of natural and historical occurrence. Christ teaches a teleological system of ethics, whose laws serve self-interest. "The highest and ultimate good is an individual, egoistical one: the perfection of one's own moral personality, the happiness of the soul." The Christian God is a personal God, creator of heaven and earth, the life-giving spirit underlying all natural occurrence, whose existence inspires us with the hope that our moral life may reach completion. "If there were no God, we should have to invent one in the interest of ethical science."

Gallwitz falsely accuses utilitarianism of not taking account of the subjective factor of morality on which he himself lays such stress. Yet Paulsen, whom he takes as the representative of this school, bases morality on sympathetic impulses which grow with human reason and thus insure ethical progress. Besides, I fail to see what can be the significance of a personality that is determined in critical periods by the deity working upon it through external circumstances. Paulsen would also agree with the author that there are individual diversities; indeed, he insists on them quite as strongly as Gallwitz does. Evolutionary ethics, too, grants that the same impressions affect different individuals differently, and bases on this fact the elimination of some and the preservation of others. In spite of these differences, however, we discover

fundamental similarities in human nature, some impulses being common to all mankind, and observe, under like conditions, a regularity of action. And this is all that is meant by embracing phenomena under general terms, and referring to the uniformity of nature. When the writer denies the reign of law in the universe, and in the same breath speaks of the inexorable law of personality, it is difficult to know whether to take him seriously or not.

His objections against the utilitarian theory seem to me to rest on a misunderstanding of its doctrines. We might easily forgive him for identifying welfare with mere passive enjoyment, but surely his contention that some nations have not *consciously* aimed at welfare cannot be urged as an argument against the principle. The absolute authority of the law which he instances as another serious difficulty would also militate against his own system. Besides, he himself afterwards gives a satisfactory explanation of this phenomenon when he characterizes conscience as a "remnant of education." Again, the assertion that moral nations have been destroyed does not warrant the conclusion that morality is not a preservative. No society could exist without moral rules, yet the mere observance of these prescriptions cannot be an absolute guarantee of survival. I cannot live without eating, but eating will not keep me alive forever. Gallwitz also points out that peoples have perished because of their customs, and infers from this that customs do not conduce to the common weal. No one maintains that all customs lead to general welfare; there are good, bad, and indifferent courses of conduct, those which injure the race being bad.

The development of individual personality is accepted by the author as the ethical end. The vagueness generally belonging to the term is obviated by the introduction of theological conceptions. Wherever the theory fails, the *deus ex machina* steps in. The writer is, however, bolder and more logical than self-realization moralists usually are in drawing the necessary conclusion of the theory. Where there are collisions between personal and social ends, the latter must yield. Yet this consistency divulges the weakness of the principle, and invites attack. Call such a system egoistic hedonism or egoistic perfectionism, it is none the less selfish.

But these objections must not blind us to the real excellences of the book. It deserves commendation for the way in which it approaches the problem as well as for its general appreciation of the facts both psychological and historical, and cannot fail to be of service to those interested in the subject of ethics.

FRANK THILLY.

SUMMARIES OF ARTICLES.

[ABBREVIATIONS. — *Am. J. Ps.* = *American Journal of Psychology*; *Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie*; *Int. J. E.* = *International Journal of Ethics*; *Phil. Jahr.* = *Philosophisches Jahrbuch*; *Phil. Mon.* = *Philosophische Monatshefte*; *Phil. Stud.* = *Philosophische Studien*; *Rev. Ph.* = *Revue Philosophique*; *R. I. d. Fil.* = *Rivista Italiana di Filosofia*; *V. f. w. Ph.* = *Vierteljahrschrift für wissenschaftliche Philosophie*; *Z. f. Ph.* = *Zeitschrift für Philosophie und philosophische Kritik*; *Z. f. Ps. u. Phys. d. Sinn.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane*. — Other titles are self-explanatory.]

LOGICAL.

Ueber Sinn und Bedeutung. G. FREGE. Z. f. Ph., C, 1, pp. 25–50.

If equality is a relation between objects and not between names or signs for things, the proposition '$a = b$' would not differ from '$a = a$.' But the former is synthetic, the latter analytic. What we seem to express by '$a = b$' is that the symbol 'a' denotes the same thing as 'b,' and the relation is therefore affirmed of the symbols. But this relation is mediated through the connection of each of the symbols with the same thing. The *difference* of the symbols must correspond to a difference in the manner in which the thing denoted is given. We must then recognize in a name or symbol (which may consist of one or more words), over and above the object denoted (Bedeutung), its sense (Sinn) or meaning. If three straight lines, a, b, and c, intersect in a point, 'the point of intersection of a and b' will have the same denotation as 'the point of intersection of b and c,' but not the same sense. The *sense* of such a name is always understood by every one who knows the language; a definite meaning is always attached to one sign: but a symbol may have no denotation, or more than one name may be used to denote the same object. In indirect speech symbols do not denote objects, but the meaning or sense of the speaker, or that which is commonly their meaning. The denotation of a word in indirect speech is thus its usual sense.

We must distinguish both the denotation and the sense of a name from the representation (Vorstellung) connected with it. Not always even in the same persons is the same Vorstellung connected with the same sense. The Vorstellung is subjective, and so differs essentially

from the sense of a name which can be common to several. The sense of a name, too, does not imply space and time relations, while these are always joined to a Vorstellung. We enquire now after the sense and denotation (Sinn and Bedeutung) of assertory clauses which contain a complete thought. The thought is the *sense*, not the *denotation* of such a proposition, and this latter must be found in its relation to reality. It is the striving towards truth which urges us onward from the sense of a proposition to what it denotes. One may be tempted to regard the relation of thought to truth as that of the subject to the predicate. But subject and predicate are in a logical sense portions of a thought, which is formed by their connection, but never in this way do we pass from a thought to reality. Subordinate clauses have generally no complete meaning attaching to them, and consequently do not denote objects. This arises either from the fact that in subordinate clauses the words have their indirect signification, or through the incompleteness of these clauses, which only express a thought when taken in conjunction with the rest of the proposition.

If we found that the value for knowledge of '$a = a$' and '$a = b$' differs greatly, this is explained by the fact that the *sense* of a proposition, *i.e.* the thought which it expresses, is not less important than its denotation. Although a and b both denote the same object, yet their *sense* can be different, and consequently the thought expressed in the proposition '$a = b$' different from that expressed in '$a = a$.' If we understand under judgment the advance from thought to its correspondence with truth, we can also say that the judgments are different.

Wesen und Bedeutung der Impersonalien. R. F. KAINDL. Phil. Mon., XXVIII, 5 u. 6, pp. 278–305.

While according to grammar every sentence must have subject and predicate, and according to logic in every judgment of a subject a predicate concept must be asserted or denied, there seems to be no subject in such expressions as '*es donnert, mir ist wohl, es ist Tag.*' Impersonals may be treated from two points of view, the *psychologico-logical* and the *philologico-historical.* The present article is devoted principally to a logical investigation of the subject. Traditional logic teaches that the judgment has two members. Some, however, (Brentano, Miklosich, Marty,) find the essence of the judgment in the act of recognition or rejection, and claim that this can as well take place with one concept as with two. When Miklosich says that in the sentence '*pluit*' the subject is not only not expressed but also not even thought, he is right, but only in so far as he is thinking of an efficient subject. Here, as in the case of all impersonals, there is a subject in the wider sense. Every

judgment as thought has two members. The expression, however, may be incomplete, either the subject or the predicate being omitted. K. investigates the conditions under which the subject is omitted, and reaches the conclusion that impersonals of all classes name some definite occurrence or state of things without any thought of an efficient subject. The subject in the wider sense is the concrete-real occurrence or state which we have in mind but do not bring to spoken expression. K. discusses further the origin and proper designation of impersonals, and the significance of the third person singular, and of the '*es*' or 'it' in such expressions.

PSYCHOLOGICAL.

The Field of Æsthetics Psychologically Considered, I. H. R. MARSHALL. Mind, I, 3, pp. 358–379.

Æsthetic theory has gained little of fundamental importance from the discussions by philosophers in the past. This is not because æsthetic problems have been neglected by the best thinkers, but rather because they have looked upon them as secondary issues. Non-hedonistic æsthetic theories have, from a psychological point of view, resulted in failure. Hedonic the æsthetic psychosis certainly is. Whether this hedonic quality is of great moment, is a question to be determined. M. agrees that associations which are pleasurable are important elements in an æsthetic effect; but if the associationist means that æsthetic effect is determined altogether by pleasure-revivals, he cannot follow, for presentation pleasures certainly have much to do with the effects of beauty. If, on the other hand, the associationist means to identify hedonic phenomena and æsthetic phenomena, we are at once met with the objection that, while æsthetic states of mind are pleasurable, not all pleasurable states are allowed to pass for æsthetic. What are the bounds of the æsthetic within the hedonic field? Kant distinguishes the agreeable from the beautiful by the supposed presence of sense pleasure in the former, and the absence of the same in the latter. This distinction cannot be accepted. Eye and ear sensations are obvious exceptions; but if it be admitted that one set of senses can produce æsthetic effects, the whole contention fails, and a close examination shows clearly that the rest of the senses may act in the same manner in the make-up of æsthetic complexes. Pleasures of the typical emotions are also of great moment in æsthetics, but they do not stand alone, as some have held. 'Association' by itself can, of course, give no account of distinctively æsthetic effect. Recognized, as well as unrecognized,

usefulness seems to be an element. The distinction between the 'higher' and the 'lower' pleasures is illusory. It is the man who has grown to be capable of appreciating new ethical standards, and who has lost his pleasure in the old, who makes a distinction between pleasures of higher and lower grade. This by no means shows that what was pleasurable in his undeveloped or uncultivated state was not æsthetic for him at that time. Nor does it show that ethical standards are unimportant for æsthetics. What is 'immoral' is painful. But the mass of æsthetic effects are made up of elements entirely unmoral.

The Festal Origin of Human Speech. J. DONOVAN. Mind, I, 3, pp. 325–340.

Every event of life and nature that has awakened the reflection which distinguishes man from brute, is dwelt on by the savage through festal excitement. Of what use are measured sounds amid the wild excitement of the festal players? Musical sounds will, above all else, attract and absorb attention. Without implying anything of the nature of conscious choice, we may fairly assume that savages would be driven, at each revival of festal excitement, to feel out a way of making the sounds more and more absorbing. They could do this by bringing the sounds, however produced, into a more or less regular succession. At this very low stage of development musical instruments could not have existed; hence the vocal organs would be brought most prominently into use. Here the impulse to produce successive sounds would naturally result in articulation. The rudest music, too, would imply the modification of some sound in the continuous succession, *e.g.* by increase of stress in the blow struck. Hence, beyond a succession of mere units of sound, there would now be a succession of groups. To provide a similar modification in the vocal utterance required only a jerk of the breath. Articulate sounds could impose no particular order upon the confused feelings and perceptions of festal play; they could only wait while they entered into the order imposed upon them by the players' wild imitation of actions, and then preserve them in that order. When particular syllables got fixed upon particular actions, they would be brought up with them; and here two chief interests of the festal excitement would begin to clash, the interest of significance and that of merely pleasing sound. In later stages of development, the simply ear-attracting syllables are driven out of the significant phrases altogether, and left to refrains. D. does not attempt to show how impulses of festal excitement came to blend with conscious endeavors to make distinctions of meaning, or what the results of the blending would be.

La Musique d'après Herbert Spencer. JULES CAMBARIEN. Rev. Ph., XVII, 7, pp. 18–40.

In the language of an impassioned man Spencer finds all the elements of melody: burst of sound, quality or timbre, pitch, intervals, relative quickness of variations. All these phenomena, the physiological effects of psychological states (pleasure and pain), are in vocal music carried to their highest degree. This Spencerian theory is by no means new; we find its essential idea in many works of the eighteenth century. In spite of the many facts and examples offered by Spencer in support of his view, it needs but little musical sense to recognize its many weaknesses. Music has for its base the scale, which does not exist in speech. It is a system which rests partially on objective laws of sound, partially on convention. The scale is a work of art, a creation of the æsthetical sense. Spencer ignores this element. Further, he regards song as the exaggeration of instinctive speech. To exaggerate means to falsify. Melodies produced on this principle would be to true music what caricatures are to sculpture. We also demand of music that it be beautiful. Spencer fails to tell us whence we get this element. Besides, passion has some ugly physiological effects. Why does the musician relieve these by means of the beautiful? If Spencer were right anybody could be a musician. Finally, the most important element of music, that which no empirical theory can explain, is the *musical thought.* The most expressive timbres are meaningless without a unifying idea. This faculty of thinking in sounds is the result of a long cultivation of the æsthetical sense. The musical mind has grown from the language of sensation to that of abstraction. "Every musical thought is, at the same time, an imitation of the external world or at least an expression of feeling; every imitation of the external world or every expression of feeling is, at the same time, a musical thought."

Existence et Développement de la Volonté. ALFRED FOUILLÉE. Rev. Ph., XVII, 6, pp. 577–600.

Volition is neither a complexus of sensations nor a special faculty, but psychical force. Every state of consciousness is *idea* in so far as it involves discrimination (*discernment*), *force* in so far as it involves preference. Feeling and reaction are inseparable. Each particular sensation depends on the general sensibility, each particular reaction on the general activity. F. does not mean by idea a kind of psychical atom. There is no simple state of consciousness, every state being the resultant of an immense amount of action and reaction between us and the external world. Nor are the diverse states of consciousness and

ideas endowed with a detached force; their action is that of the whole of consciousness, of which they are but the forms and actual manifestations.

There is another proof of the existence of will. Our presentations we refer to the external world; our volitions, however, we attribute to ourselves. On this difference alone the distinction between subject and object can be based. Besides, the character of unity and continuity which we attribute to the ego would be incomprehensible without the continuous action of the will to live. Similarly our affections would remain inexplicable without will. Pleasure and pain are not mere passive additions to consciousness. There is present a tendency to maintain the pleasurable and reject the painful, consequently a spontaneous and inevitable choice or will. Every sensation is a complete psychological process with all its elements. We are everywhere active; will ceases with life alone.

Whoever denies the existence of will must, on considering the matter physiologically, reduce all cerebral facts to simple peripheral impressions. But the absence of a central element can never be proved. Simple *cerebration* (to which the *idea* of a *possible* movement corresponds) is a state of tension in which a totality of little oscillatory movements counteract each other, while the actual triumph of a cerebral impulse implies a nervous discharge in a given direction. According to the resistance which the volition encounters both in execution and production, there is a more or less intense feeling of mental and cerebral effort. The usual distinction between sensorial and motor centres is artificial. Every centre is both. The centre moved, moves in its turn; if there were no other centres in question, the shock given by the centripetal current would produce a centrifugal movement on the same path. Hence every sensation is at the same time impulse, every impulse sensation. Special inhibitory organs are also fictions. Two nervous currents reinforce or neutralize each other.

F. next considers the existence of will from the philosophical point of view. There are not two distinct realms, one of movement and one of thought. For the philosopher the world is but a phenomenon. It is vain to seek a real activity or causality in such a physical world, there being but successions of phenomena in time and space here. The true activity must be ascribed to the reality which dwells beneath the system of visible and tangible appearances. It is will. Will and feeling consciousness are everywhere. Philosophy will come to see in physical energy the external expression of psychical energy, *i.e.* will, which constitutes reality.

Beiträge zur vergleichenden Psychologie. Von KARL L. SCHAEFER. I. *Das Verhalten wirbelloser Tiere auf der Drehschue.* Z. f. Ps. u. Phys. d. Sinn., III, pp. 185–192.

These experiments are in continuation of investigations on the perception of passive motion — more especially rotary motion — in which the reacters were vertebrates having semicircular canals. In this case invertebrates — snails, flies, beetles, ants, caterpillars, and ear-wigs — were placed on the rotary table and their reactions to rotary motion observed. S. found that the 'reacters' moved on a plane table against the motion of the table, though not in every case. The caterpillars did not move at all, the snails not always, and the beetles, ants, flies, and ear-wigs only when they were already in motion. Unlike the vertebrates, the invertebrates investigated showed no after effects of the rotary motion in the form of rotary giddiness.

Ueber die Empfindlichkeit des grünblinden und des normalen Auges gegen Farbenänderung im Spektrum. Von E. BRODHUN. Z. f. Ps. u. Phys. d. Sinn., III, pp. 97–107.

The earliest investigators had found that the eye was most sensitive to change of color near the D line of the spectrum (yellow). Next to this came the region near the F line (blue). Later, König and Dieterici found the maximum sensitiveness just left of the F line. Using an apparatus in which the adjacent spectra compared were produced by an equilateral flint-glass prism, the author compares his green-blind eye with A. König's normal eye. The method of mean errors was used, and for each region of the spectrum investigated fifty adjustments were made. B. found first that the greatest sensitiveness to difference for his green-blind eye was slightly to the left of the maximum for normal eyes, *i.e.* to the left of F; left from the maximum, the green-blind eye shows more sensitiveness than the normal, but then decreases rapidly, while the normal eye shows a second maximum in the yellow. Surmising that another small increase in the curve of sensitiveness beyond the F line was due to change in intensity rather than quality of light, B. varied the brightness of the fields of color. For both the normal and the green-blind eye the slight increase beyond F disappeared, while throughout the observed range of colors the sensitiveness became somewhat less. Similar results were found by W. Uthoff (Gräfes Archiv, 1888, Bd. 34), who used the method of minimal changes.

Maudi et le Calcul Mental. Rev. Scient., XLIX, pp. 363–365.

The investigation of Maudi, the French 'lightning calculator,' seems to show that he is more remarkable for memory than for the rapidity or

depth of his calculations. Thus he took ten minutes to perform the following five operations: 1st, addition of 22,423, 379,999, 823,111, 79,437; 2d, square of 940, and square of 953; 3d, division of 482,765 by 4760; 4th, cube root of 121,287,375; 5th, fifth root of 847,288,609,493. Of the ten minutes taken to perform the above, about five were devoted to repeating the numbers as they were given out. Good professional calculators could work out on paper and in about the same time all that Maudi did mentally; in fact, he simply used his extraordinary memory for figures where the common calculators used pen and paper. Whether his memory was auditory, neural, or motor was not determined: Maudi himself called it 'auditory,' but did not clearly understand what the term meant.

Sur quelques minimums perceptibles d'Odeur. Pas M. JAQUES PARRY. Compt. Rend., CXIV, pp. 785–788.

The odorous substances used were not complex natural 'essences,' but bodies which were chemically well defined. Expressing the threshold values in millionths of a gramme, P. found for camphor 5, for ether 1, for citral 0.5, for vanilla 0.005. The odoriferous power of an odor is to be distinguished from its intensity: the former is inversely as the threshold value; the latter is determined by the relative amount of a substance required to mask the odor of another. Thus, when threshold amounts of citral and vanilla are put together in a flask, the vanilla alone is perceived; but if the citral is increased tenfold in weight, the vanilla would have to be increased one hundred times to be perceptible. The intense substances correspond to Beaunis' odors [short reaction time]; and the powerful substances to Beaunis' perfumes [long reaction time]. The 'minimum perceptible' varies with different individuals, and with the same individual at different times.

ETHICAL.

Natural Selection in Morals. S. ALEXANDER. Int. J. E., II, 4, pp. 409–439.

Natural selection operates in morals and politics as well as in the vegetable and animal worlds, but with differences that have caused it to be misunderstood. In the former it is a struggle, not of lives, but of ideals. The reformer represents a plan of conduct that is a variation from the typical plan. A struggle ensues, the old unmodified plans of

life succumb under the influence of persuasion or education. A new demarcation between good and evil results; indeed, this is the name given to the victory of one plan over its competitors. The success of a moral ideal, however, is not the cause, but only the proof of its goodness. Society as a whole may be compared to a genus of which the individual members are specimens. Because each one's plan of life is social, it appeals in some degree to the rest. The gradual transition from the struggle between individuals to the struggle between plans, is clearly traceable in the history of toleration. In more modern times it appears in conflicts over the theory of punishment. In reality, natural selection is on the side of those who pity rather than hate crime. Punishment is a weapon in the conflict of plans, a means of persuasion rather than of extermination. So, too, the ideas of the French Revolution were spread by armies; at present democratic ideas are spread by persuasion. Natural selection offers no reason why every member of society should not be preserved and helped to live as effectively as he can. At the present time it is at work not so much in the fierce competition of business as in the struggle between the two rival systems of competition and collectivism.

An Analysis of the Idea of Obligation. F. C. SHARP. Int. J. E., II, 4, pp. 500–513.

Approbation or disapprobation is directed towards things as fit or unfit to accomplish desired ends. The altruist approves the labors of those who work to make life richer, and disapproves the opposite. Strong desire turns approbation into demand, while increased knowledge leads one to limit his demands by another's possibilities of compliance. This pressure of one will on another, demanding of it a certain course of action, is a strong social influence. If insufficient, it can be strengthened only by reward or punishment. These facts serve to explain moral obligation.

The *ought* involves an affirmation that a certain action is necessary as a means to a certain end and an emotion accompanying that affirmation. There are four distinguishable forms, — the 'I ought,' the 'you ought,' and the more impersonal forms culminating in the theological ought. The *ought* assumes the existence in another of the desire for an action, while the *must* makes no such assumption. When from the idea of obligation the element of the good or the ideal is eliminated, nothing remains but mere submission to an arbitrary imperative. Hence obligation cannot be the fundamental fact of moral experience.

METAPHYSICAL AND EPISTEMOLOGICAL.

The Law of Mind. C. PIERCE. Monist, II, 4, pp. 533–559.

The tendency to regard continuity as an idea of prime importance in philosophy may be conveniently termed *synechism*. What synechism is and what it leads to, may be brought out by comment on the formula of mental action. Logical analysis applied to mental phenomena shows that there is but one law of mind; namely, that ideas tend to spread continuously and to affect certain others which stand to them in a peculiar relation of effectibility. The value of this law becomes apparent in view of the difficulties presented by the common theory of association of ideas. We are accustomed to speak of ideas as reproduced, as passed from mind to mind, as similar or dissimilar to one another. But taking the word 'idea' in the sense of an event in an individual consciousness, it is clear that an idea once past is gone forever, and any supposed recurrence of it is another idea. These two ideas are not present in the same state of consciousness, and therefore cannot be compared. All relation, being between ideas, can exist only in some consciousness; now that past idea was in no consciousness but that past consciousness that alone contained it; and that did not embrace the vicarious idea. Then, since we may not jump to the conclusion that a past idea cannot in any sense be present, the conviction comes that it must be present by direct perception. We are thus brought to the conclusion that the present is connected with the past by a series of real infinitesimal steps. The suggestion that consciousness necessarily embraces an interval of time is not tenable, if a finite time be meant. For if the sensation that precedes the present by half a second were still immediately before me, then, on the same principle, the sensation preceding that would be immediately present, and so on *ad infinitum*. All that is requisite is that we should be immediately conscious through an infinitesimal interval of time. In this infinitesimal interval we directly perceive the temporal sequence of beginning, middle, and end. Now, upon this interval follows another, whose beginning is the middle of the former and whose middle is the end of the former. From the immediate perception of these two intervals we gain a mediate, or inferential, perception of the relation of all four instants. Now let there be not only an indefinite succession of these inferential acts of comparative perception, but a continuous flow of inference through a finite time, and the result will be a mediate consciousness of the whole time in the last moment.

One of the most marked features about the law of mind is that it gives time a definite direction of flow from past to future, so that the

relation of past to future is different from the relation of future to past. The flow of time consists in the fact that, in reference to any individual state of feeling, all others are of two classes, those which affect this one and those which do not. The present is affectible by the past, but not by the future. Time involves a continuity of qualities which undergo a change continuous in time. The development of the human mind has practically extinguished all feelings except a few sporadic kinds. But originally all feelings may have been connected in a way indicated by the tridimensional spread of feelings in the case of colors. And the presumption is that the number of dimensions was endless, for development essentially involves a limitation of possibilities.

Feeling has also a subjective, or substantial, spatial extension. This is a difficult idea to seize, for the reason that it is a subjective, not an objective extension. It is not that we have a feeling of bigness; it is that the feeling, as a subject of inhesion, is big. Since space is continuous, it follows that there must be an immediate community of feeling between parts of mind infinitesimally near together. Without this it would have been impossible for minds external to one another ever to become coördinated, and equally impossible for any coördination to be established in the action of the nerve-matter of one brain. In considering the affection of one idea by another, we encounter three elements: the intrinsic quality of the idea as a feeling; the energy with which it affects other ideas; the tendency of an idea to bring along other ideas with it. As an idea spreads, the first element remains nearly unchanged, the second gets rapidly reduced, the third increases. Now a finite interval of time generally contains an innumerable series of feelings, and when these become welded together in association, the result is a general idea. The first character of an idea resulting from this continuous spreading and generalization is that it is a living feeling. A continuance of this feeling, infinitesimal in duration, but still embracing innumerable parts, and also, though infinitesimal, entirely unlimited, is immediately present. And in its absence of boundedness a vague possibility of more than is present is directly felt.

The mental law follows the forms of logic. By induction, a number of sensations followed by one reaction become united under one general idea followed by the same reaction; by the hypothetical process, a number of reactions called for by one occasion get united in a general idea which is called out by the same occasion; by deduction, the habit fulfils its function of calling out certain reactions on certain occasions. But no mental action seems to be necessary or invariable in its character. The mind is not subject to 'law' in the same rigid sense that matter is. There always remains a certain amount of arbitrary spontaneity in its action without which it would be dead. When we consider that,

according to the principle which we are tracing out, a connection between ideas is itself a general idea, and that a general idea is a living feeling, we have taken one step toward the understanding of personality. Personality is some kind of coördination of ideas, and coördination implies a teleological harmony which is more than a mere purposive pursuit of a predeterminate end. A general idea, living and conscious now, it is already determinative of acts in the future to an extent to which it is not now conscious.

The Changes of Method in Hegel's Dialectic (II). J. E. McTaggart. Mind, I, 2, pp. 188–205.

The conclusion reached in the first paper was that the dialectic cannot fully represent in any part of its movement the real and essential nature of pure thought, but obscures this under particulars which are not essential, and so may be regarded as in some degree subjective. The discrepancy arises from the fact that, whereas the true process — which follows the essence of the actual process in time, and which alone is preserved and summed up in the Absolute Idea — is a direct process from one term which exists only in the transition to another; the actual process, on the other hand, is one from contradictory to contradictory, each of which is conceived as possessing some stability and independence. Secondly, it is subjective, because it does not fully express its own meaning, the meaning of the process forwards. The dialectic advance has mixed up with it elements which do not belong to the true advance, but are due to our original ignorance about the latter, of which we only gradually get rid.

Nevertheless, this subjectivity of the dialectic does not lessen its significance or practical importance, for it is a method of arriving at truth. It is of importance that the end should be reached, that we should advance to the Absolute Idea; but the steps by which we reach this may contain mistakes. Again, the element of indirectness which is introduced by the movement from thesis to antithesis diminishes as the dialectic proceeds, and in the ideal type wholly dies away. Confirmation of this view is found by examining the all-including triad given by H. as Logic, Nature, and Spirit. Here we have all the characteristics of the Notion; the second term is to be regarded, not as in opposition to, but as the completion of the first. The transition can be stated in the form which is used of the lower categories, *i.e.* we may take as thesis pure thought, and for antithesis the element of Immediacy in experience. We see that when the whole ground of the dialectic process is covered in a single triad, either method may be used, which suggests that the two methods are approximate to the two ends of the series which are here

united by a single step. The method which H. adopted is the more correct and convenient, yet its use alone, without the knowledge that it does not exclude the concurrent use of the latter as equally legitimate, has led to grave misconceptions of the system. For the method which H. did not adopt has the advantage of bringing out the fact that immediacy is as important and ultimate a factor in reality as Logic is, and one which is irreducible to it. The two terms are exactly on a level. The dialectic system, then, makes no attempt to eliminate the elements of immediacy in experience or to deduce existence from essence, but we learn from it that in the universe is realized the whole of reason and nothing but reason.

Our Monism: The Principles of a Consistent Unitary World-View. ERNST HAECKEL. Monist, 2, 4, pp. 481–487.

(1) Monism exists in opposition to whatsoever comes between nature and mind, between the world and God. *Natur-philosophie* embraces the entire body of human knowledge, and becomes really philosophy when it has brought together results which analysis has ascertained. (2) Mechanicalism: mechanical causes, in the sense of Kant, are assumed as the sole effective cause and are placed in opposition to teleological causes. (3) Psychism: all matter is ensouled. This is exemplified by chemical affinity, by the 'irritability' of lower organisms, by the feeling and will of man. (4) Theism: the only idea of God logically compatible with monism is that which views him as the sum-total of the forces of the universe, which is inseparable from the sum-total of the matter of the universe. (5) Materialism: all the phenomena of the world are founded upon material processes. Yet matter did not originally exist alone and then secondarily create force or mind. (6) Spiritualism: feeling is as fundamental a property of the atom as is attraction or repulsion. Every 'spirit' is inseparably united with some 'matter.' Yet force did not originally exist and then secondarily create matter. (7) The 'belief in immortality' is scientifically tenable only as a general proposition equivalent to the conservation of energy. The 'human soul' is simply a transient, developmentary phenomenon. (8) Cosmism: the principles of world-conception laid down may also be designated *cosmism*, to the extent that they proceed from the fundamental idea that the 'world-process,' as world-development, is, within certain limits, a knowable natural process. Cosmism is thus opposed to agnosticism.

Lotze's Antithesis between Thought and Things, I. A. EASTWOOD. Mind, I, 3, pp. 305–325.

We might say that the root-conception of L.'s system is the assumption that some external objective reality distinct from human thought exercises a causative action upon our minds. L.'s first concession toward rectifying his mistake is that thought is in part constitutive of knowledge, the reason being that each of two objects which act upon one another contributes from its own nature to the resultant effect. But he makes a second, and still greater, concession to the importance of the work of thought. Thought always colors objects given to it, but sometimes it even makes its own objects entirely out of its own nature. We must now examine those claims to be independent which 'things' put forth. Why are 'things' more than thoughts? First, because they account for the *a posteriori* element in knowledge. As such an element is excluded from L.'s narrow and formal view of thought, it must be referred to an unknown, outside thought. But this is not enough. The *a posteriori* element might be a flux of particulars, in which case 'things,' being void of permanent qualities, could not be the subject-matter of a theory. It is therefore necessary to universalize 'things,' so that metaphysical attributes may be predicated of them. Thought had previously been stripped of its concrete particularity, in order that 'things' might be clothed with reality; now its universality is borrowed from it, in order that 'things' may be invested with the only property which can make them cognizable. For L. time is transcendentally real. If tenable, this view constitutes the stronghold of his system. Cause and effect differ from reason and consequence in that the former are in time, the latter not. Now if time-relationship is in any way applicable to 'supersensuous' or 'intelligible' 'things,' it at once becomes possible to invest those 'things' with a causal activity. No sooner has L. completed his vindication of the 'reality' of time than he is seized with an uneasy foreboding that he has committed himself to a doctrine incompatible with the ultimate goal of his philosophy. It is to the philosophy of religion, he concludes, that we must look for help.

Du quelques Idées du Baron d'Holbach. ANDRÉ LALANDE. Rev. Ph., XVII, 6, pp. 601–621.

From one end to the other of Holbach's *Système de la Nature,* which is regarded to-day as an exploded materialism of the past, we recognize the essential traits of modern evolutionist philosophy as this is embodied in Spencer. We find there nature conceived as a real existence independent of our mind and possessing in itself a system of simple, uniform,

and immutable laws. This realism is complemented by a corresponding theory of knowledge, according to which reason is the gradual product of an experience more or less long, and gives a faithful representation of the order in the external world. These premises condition the adoption of the 'natural' method, which consists in always reasoning from the physical to the moral, from the inferior to the superior. H. explicitly advocates this method and strictly follows it in his work, rising by degrees from the fundamental laws of matter to the highest principles of the intellectual and social world. The science of ethics crowns the edifice. This science H. considers as the goal of every philosophy. Here, too, we find an essential agreement with empirical and evolutionist morals. Morality is regarded as a part of universal conduct and interpreted physically; the good is reduced to the useful and the useful to the pleasant; moral instinct is explained by experience, heredity, environment, and justified by its happy consequences; optimism and determinism are taught. There is also a singular similarity of spirit, method, and views between the *Principles of Sociology* and *Data of Ethics* and the *Système de la Nature*. In the conception of a problem, in the manner of conducting an explanation and of employing examples, in the turn of the arguments, even in the tone of the discussion, we discover a striking resemblance, and by a singular chance the fundamental idea of this philosophy finds expression in passages which might be called mates. Compare the beginning of the *Data of Ethics* with the motto of the *Système de la Nature*: "*Naturae rerum vis atque majestas in omnibus momentis fide caret, si quis modo partes ejus, ac non totam complectatur animo.*"

L'Inconnaisable dans la Philosophie Moderne. G. FONSEGRIVE. Rev. Ph., XVII, 7, pp. 1–17.

According to Positivism, only facts and laws are knowable, there being neither substances nor causes, hence neither bodies, souls, nor God. But since the observer sees only a narrow field of events and yet feels that there must be an immense mass of phenomena outside of the reach of consciousness, in the past and in the future, the domain of the unknowable is very large. On the Kantian hypothesis, the physical mystery of Positivism disappears, the constancy of natural laws is vouchsafed, but a metaphysical mystery arises. It is impossible to show whether anything objective corresponds to these mental forms. The existence as well as the essence of the soul, the external world and God cannot be known. The realm of the unknowable is impenetrable by reason; faith alone is left us here.

Had Criticism succeeded in overthrowing Empiricism, Kant would be

right. But his hypothesis is weak and unintelligible. What can an innate idea be before consciousness? A thought before thinking! Say that these ideas mean mental laws. Then you must hypostasize a subject as bearer of these laws. Then the theory contradicts itself, for one of its conclusions makes the existence of the mind problematical. If, however, you deny the reality of the mind and regard the *a priori* forms as mere abstractions resulting from mental analysis, what follows? Either an idealistic theory according to which everything is knowable, since everything is idea, and against which consciousness protests; or a dogmatism which holds that our ideas represent something, that they are in consciousness a product whose factors must be sought outside of it. Hence these laws will have an objective validity, and we are justified in constructing a truly scientific metaphysics.

F. adopts this latter view. Neither the existence nor the essence of objects is unknown to us. The existence of the soul, the world, and God is known to us, the essence of these partially knowable by the effects which they produce in us and which consist in thoughts and perceptions. To God we may ascribe as qualities the effects produced by him in the world; among these we enroll consciousness and thought. However great the sphere of the unknowable remains for such a philosophy as this, the knowledge it yields is sufficient for our guidance.

Die Wirklichkeit als Phänomen des Geistes. A. ROSINSKI. (II Schluss.) Phil. Mon., XXVIII, 5 u. 6, pp. 257–277.

Reality is given us by means of sense-perception. The self can ascribe existence to the things to which it refers the various contents of perception only in case they have become its presentations. The consciousness of independence of me is a quality of my presentation of the object; it is the characteristic idea which distinguishes this presentation from others. Being is a category, a necessary rule of thinking, by which the object first gets its objective character. If I say 'A is,' I express the objectification of A simply through the category of being; but since the categories are only functions of thinking, and so purely subjective forms of spirit, the objects get their objectivity only through us. Reality cannot have the significance of absoluteness, but must rather have that of relativity. Things must be endowed with such a nature that the laws by which they become things find application to them; they can belong only to the sphere of the laws themselves; they must therefore be pure phenomena of spirit. Neither consciousness nor its object can exist for itself; consciousness has existence only in (*an*) its object. If neither outer nor inner objects appear to us, our consciousness, too, must disappear. Subject and object mutually condition one another.

Together they form a complex, an immanent unity subsisting by mutual dependence. Herbart's notion of an absolute positing is self-contradictory — as posited, the object would be in us, and as absolute, it would be quite apart from us. It is just as if we should say that the table is in the room and not in it at the same time. The truth of knowledge is dependent only on its agreement with the laws of the understanding. These laws fully satisfy our feeling of conviction and impulse to know. The concept is developed into the judgment by subjecting itself to the identity of the self. The equality of the concept with itself is only the objectified expression of the identity of the self. Since knowledge is possible only through categories, and that, too, only when the categories form an immanent unity with the identity of the self, and since the identity of the self involves the relativity of its object, all knowledge, and so the entire world-picture, is only subjective. This applies not only to things, but to selves. All spirits are only in my spirit — every self is only a phenomenal form of my self. The moral order of the world is a necessary form of evolution of the absolute self. In monism, to which I hold, God would be the absolute self, over against whom stand all individual selves as his phenomena. He is not an absolute-real, but an absolute-ideal essence.

Ueber die Einseitigkeit der herrschenden Krafttheorie. N. VON SERLAND. Z. f. Ph., C, 1, pp. 50–79.

It is the constant progress in the organic, and especially in the psychical sphere, which has led the author to doubt the constancy of the sum of energy in the universe as a whole. His own thesis is that "the sum of the real forces, *i.e.* those which are understood in the law of the conservation of energy, are not constant, but steadily increasing in the course of the world's history. The thing, however, which furnishes this supply is an unknown and indefinite existence, which we cannot indeed name nothing, but yet we are not in a position to say anything further of it."

In the lives of plants, animals, and men we constantly see new properties and relations arise, and those already existing becoming stronger, without being able to explain these through any existing sum of forces. Living organisms do not simply react like machines upon one invariable stimulus, but respond purposively to the most varied forms of excitement. The organisms, too, become modified, and when these modifications become permanent as a result of them, a higher stage of life is made possible. Nothing is more common than to speak of 'natural forces' and to forget that the bases of these forces are themselves indefinite and unknown. We constantly see organic beings,

particularly men, advance through an indefinite number of stages and develop from their original nature new properties and forces. But this original nature is only an indefinite somewhat out of which the forces must be produced, and what is produced is generally higher and more complex than the stimulus.

The development of memory and the other intellectual powers cannot be supposed to take place at the expense of other vital forces; for if the development has been harmonious, if the body has not been neglected or misused, the individual is physically stronger than before. Further, contact with persons or things calls forth new dispositions and feelings, and deepens those which already exist; *i.e.* produces new psychical forces without necessitating any loss. Stimuli of a negative character, like cold, hunger, pain, have a similar effect. Painful psychical experiences are most important for the genesis of positive moral qualities. All advance is the result of strain, of suffering, of conflict. If we ask for the source of this additional spiritual force, the question cannot be answered from the standpoint of the prevailing theory of energy.

HISTORICAL.

Ernst Platner's und Kant's Erkenntnisstheorie mit besonderer Berücksichtigung von Tetens und Aenesidemus. A. WRESCHNER. Z. f. Ph., C, I, pp. 1–25.

Three editions of Ernst Platner's chief philosophical work, *Philosophical Aphorisms*, appeared between 1776 and 1800. The second edition was published in 1784, and, as it was nearly completed before the publication of Kant's *K. d. r. V.*, it does not show any great influence of this latter. The third edition, as a result of this influence, however, was very much modified, and, as P. said in his preface, the work appeared in a completely changed form. Besides the *K. d. r. V.*, Tetens's *Philosophical Essays* seem to have exerted a great influence upon P. This influence is especially prominent in the modification which the second edition received. It is also shown, when in the third edition P. protests against Kant's separation of sense and understanding. Tetens, although discriminating between feeling and perception, and showing the former to be a passive modification of the mind, while the latter involves a judgment, yet repeatedly insisted that both have one origin. He sought to show that all activities of the mind, feeling, understanding, and will, are of the same nature, and are only distinguished from each other by degree. Schulze's *Aenesidemus* also seems to have made a great impression upon P. The scepticism of the third edition seems to owe

its origin in great measure to this work. Although P. owes more to Kant in the third edition than to either of these works, yet he takes up a critical attitude to the firm foundations and exact boundaries which the latter professes to have found for knowledge in the Æsthetic and Analytic. It is also clear that, although influenced by Kant, he sought to find an independent position for himself. As he said, Kant's writings gave him "matter for consideration and stimulus for controversy."

La Dottrina Metafisico-Psycologica di Andrea Cesalpino. GIOVANNI MARCHESINI, R. I., d. Fil., Vol. II, 7th year.

Andrea Cesalpino's philosophy is essentially obscure, because he would not allow himself to speak openly, being the body-physician of Clement VIII. Yet his love of freedom induces him to speak with sufficient clearness to enable us to understand his standpoint.

He was born 1519. Studied medicine. He took up Aristotle with a view to interpreting him correctly and thus to fight scholastic interpretations. Professed medical philosophy in the University of Pisa. From there was called to the Collegio di Sapienza in Rome by Clement VIII, who made him his body-physician. Died 1603.

Much of his work is valuable. He anticipated in a way Harvey's theory of the circulation of the blood, having described the "little circulation" of the lungs. Invented a botanical system based on the form of the flowers and the fruit. His book, *De plantis* which Cuvier calls "une œuvre de génie," shows traces of his studies in Aristotle. His fame among his contemporaries was extraordinary; Torelli, one of his most violent enemies, says of him: "Caesalpiniana dogmata majore apud nostros fuerunt in pretio, quam olim apud Graecas Apollinis oracula." His works are: *Quaestionum peripateticarum libri quinque*, Venice, 1571. *Quaestiones medicae*, Florence, 1569. *De plantis.* The argument of Quaestiones III is: The central force (*il primo motore*) is speculative, not active (*attiva*) intelligence. The object of this intelligence is *truth*, and it draws from things their forms. (Notice the inconsistency.) In Quaestiones VI he tries to prove that intelligence is one, viz. God. As he says that the knowledge which the divine intelligence has of itself amounts to a knowledge of all things, A. C.'s enemies were not wrong in calling him a pantheist. He felt this, and tried to refute the accusation by subtle counter-arguments. In Quaestiones VIII he tries to prove that the soul is immortal. The soul alone has an independent function. In spite of inconsistencies and obscurities, A. C. played an important part in the emancipation of Aristotelian thought from scholastic rules.